ESTABLISHED IN 1872

# PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. LXXXVIII, No. 23 — Thursday, June 6, 1929

# News Print Situation Is Improving In Canada

## Recent Agreement For Control of Prices and Ratio of Production to Capacity in the Various Mills, Leads to Renewed Confidence in Industry—Canadian News Print Institute's Functions Confined to Export Business—Not a Selling Organization —Strong and Growing Demand Experienced From Europe

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., June 3, 1929.—Lively interest has been shown here in the details appearing in this correspondence lately outlining the views of Canadian publishers as to their situation under the agreement for the control of news print prices and the control of the ratio of output to capacity in the various mills. Some of the manufacturers were frankly surprised at certain of the views presented, and while there is no disposition to question the accuracy of your correspondent's version, it is felt that the publishers do not fully understand the situation.

In order to set the matter forth clearly it may be as well, therefore, to supplement the point of view of the publishers with a few facts as to the position of the manufacturers.

As far as the Canadian publishers are concerned, the understanding in Montreal is that the Canadian Newsprint Institute is not a factor in the situation at all, its operations being confined exclusively to export business. Furthermore, it is not a selling organization at all. Where it enters into the calculations is in regard to the equalization of tonnage in relation to the capacity of the various mills, and even in this direction no joint control has been established in connection with Canadian business.

From this it would appear to be correct to draw three deductions, namely:

1.—There is no established price for Canadian tonnage.

2.—There is no arbitrary allotment of Canadian tonnage among the mills.

3.—To all intents and purposes there is free and open competition for supplies of news print to Canadian publishers.

Therefore it would appear that if Canadian publishers are desirous of securing supplies on a competitive basis that course is already open to them.

What the Canadian publishers are apparently unaware of is that the laws in this country and in the United States against combinations for controlling price and output do not apply in either case to export business, and that while the Canadian manufacturers have complied with the demands of the Governments of Quebec and Ontario to establish the control of exterior business now being exercised under the auspices of the Canadian Newsprint Institute, no attempt has been made to establish a uniform price for Canadian business, the mills being permitted to go out and get customers in open competition.

Speaking generally, there seems to be little doubt that the situation is steadily improving. The average output for April and the early part of May has been running pretty close to 90 per cent of the total capacity of the mills. In any normal industry that is considered excellent business. The renewal of confidence in the industry is reflected in the stock market. During the depression which has prevailed in most stocks, the one class of stocks which as a whole has stood up well against the bear movement is the paper stocks. It is true that the depression in the industry had already been discounted; nevertheless, the strengthening tendency in paper stocks is not without significance. It can certainly be claimed that the situation in the news print industry looks better today than at any time during the past six months. That can be said even after taking new mills and additions to mills into account.

Prior to the depression, the average yearly increase in the news print industry was 7 per cent over a period of years. So far this year the increase over last year has been 5 per cent, as against an increase last year of less than 2 per cent. Should this year and the subsequent two years show a normal average increase of 7 per cent, this will take care of the new tonnage which promises to come on the market, and leave the situation in just as good a position as it is in today.

A gratifying feature is that there is a strong and growing demand from Europe. More Canadian paper is going to Great Britain today than ever before. Canada is also increasing its exports to Australia right along. There has even been a demand on this side for news print for Russia, and some has actually been sent from Newfoundland.

All this would seem to give good ground for the hope that the situation will steadily improve from now on.

### Macdonald Visiting Pacific Coast

R. G. Macdonald, secretary of the Technical Association of the Pulp and Paper Industry, is on his way to visit the mills of California, Oregon, Washington and British Columbia. The growing interest in the Technical Association has reflected itself in a large growth in its membership in the western states. It is expected that a strong local technical organization will soon be meeting the needs of the Pacific Coast pulp and paper manufacturers. There will be informal meetings in Portland, Seattle and Vancouver at which Mr. Macdonald will meet local members of TAPPI.

### Paper Index Number for April

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 5, 1929.—The paper production index number for April was 125 compared with 125 for March and 118 for April of last year taking 1923-1925 at 100 according to the Department of Commerce.

# Pennsylvania Paper Mills Seasonally Active

## Manufacturers of Fine Papers and Specialties, Such as Tissues, Grease Proof and Waxed Papers, Sanitary Products and Builders' Supplies, Are Moving Along With Higher Rate of Output Than of Late—Paper Board Production Maintained in Good Volume

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., June 3, 1929.—Though there was less demand for paper products in the past month, the closing days brought a slight spurt of buying of fair proportions. Lacking the normal seasonal volume, however, the late May buying of paper products was more in line with what might be anticipated with warmer weather. The sales extended to the wholesalers rather than to the distributors, as large contracts were placed for mid year delivery by mill representatives and those engaged in paper trading in bulk orders. Both fine and wrapping paper divisions were active in the wholesale market while distributors were concerned with broader sales of small lot orders.

Local paper manufacturers are experiencing a mid year activity that is quite gratifying after curtailed production throughout much of the springtime. Fine paper manufacturers and those engaged in the production of specialties of seasonal grades, such as tissues, greaseproof and wax papers, sanitary products and builders supplies, are moving ahead at greater speed of production, meeting the advance summer requirements of the dealers and consumers. Board manufacturers are more active, and while orders are secured at lower values than last year, there is sufficient tonnage already booked to keep the present schedule of production throughout the next three or four weeks. Parchment papers are in greater demand. Wrapping papers, however, are not keeping pace with the seasonally active grades.

As the northern kraft manufacturers and their competitors in the south and west equalize prices, the Philadelphia trade is being covered by producers from these sections for orders for the coming summer and Fall. It is more than a year since western mills were actively interested in promoting sales in this city and with the returning activity of the manufacturers from that section there has been no waning of values, all sections meeting the prices of the recent advance. Though kraft values are steady there has not been much buying for future stocking, as paper dealers have been busy clearing up old stocks on hand preparatory to the inventory of the mid year.

Both jute and cotton twines have been advanced in the past ten days although there is not as active a demand as should prevail at this time. It is not due to any unusual markets in the country but possibly to a short crop of jute in India that has caused the advance, the dealers state. All grades of twine have been advanced 2 cents per pound. Demand for both cotton and jute twines is not up to normal, so that present market conditions do not appear to warrant the rise in values.

There has been a bountiful supply of low priced writing papers appearing in the offerings from mills to the Quaker City dealers. This is due to the fact that sulphite paper manufacturers are now turning idle machines to production of these products. These new products of the sulphite mills are in cheap grades of bonds, railroad manilas and mimeograph papers. They come from manufacturers all over the East and have been freely stocked by local distributors. Other grades of sulphite papers are steady and in normal demand.

### Paper and Twine Directors Appointed

Following a business and luncheon session of the Philadelphia Paper and Twine Association, directors were appointed to the organization at the meeting held last Friday in the Adelphia Hotel. At this meeting there was also arranged an outing to be held on June 26 at the Roxborough Country Club, when the entire program will be given over to sports, golfing, dancing and a banquet to be served at the Club house.

Those appointed to the directorate were: E. L. Richards, of the Philadelphia offices of the Buffalo Envelope Company; Harold N. Newell, American Manufacturing Company; W. B. Kilhour, Quaker City Paper Company; I. J. Sheppard, Peerless Manufacturing Company, Oaks, Pa.; F. I. Brower, Kadeross Paper Company, and E. Van Schoonhaven, Knickerbocker Paper Company. These with the following officers: President George K. Hooper, Hooper Paper and Twine Company; Vice President Joseph Waldman, Jr., Edwin H. Fitler Company; Secretary John J. Birle, Jr., American Forest Products Company, Inc., and Treasurer Frederic S. Balch, Schuylkill Paper Company, will officiate in directing the organization on the granting of a Pennsylvania state charter of incorporation in the coming month.

The association has been rapidly gaining in membership and now has 27 wholesale paper and twine firms represented in its ranks. Three new firms were admitted to membership last week, including the following: Union Bag and Paper Corporation, represented by the Quaker City manager, Thomas Lawly; Fort Howard Paper Company, by I. M. Miller, and the National Waterproofing Company, by the head of the firm, Isaac Collins.

During the meeting a talk on "Credits" was given by Edwin P. Baily, of the Philadelphia Association of Credit Men, who reviewed the work of that organization in the prevention of frauds, the collection of delinquent accounts, and gave worthy praise to the Credit Bureau of the Paper and Twine Association, which, he said, was working along the right lines in co-operating with members in the extension of credit information and advice.

President George K. Hooper announced that the Philadelphia Paper and Twine Merchants Association emblem for use only by those enrolled in its ranks will be distributed in the coming month. This emblem will appear on the stationery of all members of the organization. It was designed under the direction of the Emblem Committee, of which Frederic S. Balch is chairman, in association with E. L. Richards and Frederic I. Brower.

E. L. Richards is in charge of arrangements for the coming outing and is preparing a lively program of outdoor pastimes, including a golf match, tennis, and the very important Quoits Championship contest, when James Andrews of the Schuylkill Paper Company will put his skill into recapturing the title he surrendered to George K. Hooper last year after previous victories in tossing the irons. Prizes are to be awarded the winners at the banquet.

### Paper Men Capture Typothetae Outing Awards

Paper trade associates who joined in the annual meeting and outing of the Philadelphia Typothetae, held last Monday at the Cedar Brook Country Club, were winners in the various sporting events staged for the occasion, and lead in the honors of the golfing tournament, capturing the first and second prizes as well as the championship for the allied industry of the master printers organization. D. T. Coots, Philadelphia manager for the Whiting Paper Company, was awarded the championship title for his low gross score of 83 while Arthur B. Sherrill, of Reigel & Co., Inc., fine paper dealers, won the low net and Harry W. Donahue, of the Molten Paper Company, came in for second prize as the victor in the handicap play. Other winners were J. R. Roberts, Theodore Fell, W. P. Scott, E. Gibson and C. A. Mills. In the Putting Contest, A. B. Sherrill and Edward W. Hartung, of A. Hartung, Inc., captured the laurel for the paper industry with scores of 19 each, while E. H. Thomas, C. E. Hoeflich, E. Smith, Charles Sonnemacher, William Squibb and C. D. Young were allies in the winnings.

At the banquet 180 members joined in the seasonal menu of good things and were informed of the election of the following officers:

President, Robert E. Hoeflich; First Vice-President, Julius S. Weyl; Second Vice-President, Harry Donahue, of the Molten Paper Company, who will represent the paper industry in the official body; Treasurer, Alfred J. Clark, and Recording Secretary, M. D. Maull. A. Richard Hartung, of A. Hartung, Inc., was elected to the Paper Trade Committee, with Morgan H. Thomas of the Garrett-Buchanan Company as alternate. Following the business session and election of officers the day was given over to outdoor diversions, including the Gold Tournament, quoit contests, cake splitting and putting matches. A large percentage of the golfers were paper men, with sixty members playing in the contests for the championship cup for the current year.

### Paper Trade Golf Tournament

Plans for the 1929 Golf Tournament of the Philadelphia Paper Trade Association were formulated at the meeting of the Golf Committee held here last week. The annual golfing event this year will be staged on September 17 and 18 and the tournament will be held on the links of the Manufacturers Club at Orland, just outside Philadelphia. Those on the Golf Committee of the Philadelphia Paper Trade Association are: A. B. Sherrill of Reigel & Co., Inc.; E. A. Weihenmayer, of the Jessup & Moore Paper Company, and Irwin Megargee, of Curtis & Bros.

### Kennedy Car Liner & Bag Co. Opens Office

After two years' suspension of offices in the local trade, the Kennedy Car Liner and Bag Company has again opened Philadelphia headquarters at 232 South 46th street, where sales in this territory are supervised and directed. The Quaker City branch is under the management of Charles Tucker, who had been covering this section directly from the factory.

### Whiting Paper Co. Shows New Holiday Boxes

A complete line of new 1929 holiday boxes of Whiting papers are now on display at the Philadelphia headquarters, 619 Chestnut street, where Manager D. T. Coots has arranged an extensive and attractive array of papeteries in the holiday exhibition. The new 1929 holiday Whiting papeteries include 250 designs of boxes and various assortments of colors and grades of paper adapted for Christmas gifts. There are several entirely new effects in paper and a wide assortment of hues of the latest modish colors with attractive boxes and many novel designs of the highest quality of papers as well as boxes to accompany them. This year the Whiting line contains many high grade papers which are very reasonably priced in consideration of their excellent texture and the uniqueness of boxings.

### Charles Matthias Returns From Box Convention

Charles Matthias, of the Matthias and Freeman Company, Fifth and Cherry streets, who has been attending the International Convention of the National Association of Box Manufacturers in Toronto, Can., has returned to his desk and is preparing for a tour of the Southern states with the firm's lines of Sun Rise box covers and paper box makers' supplies.

## Hinde & Dauch Establish Production Record

WATERTOWN, N. Y., June 1, 1929.—Production records have been broken several times in recent weeks at the Water street plant of the Hinde & Dauch Paper Company which is running at capacity in all departments. During the past week another high mark was established Wednesday when over 100 tons of paper were produced. Statistics show that the daily average for 1928 was 81 tons and employees are being congratulated on the new records being established. At the annual meeting of plant managers held at Sandusky, Ohio, recently, a system was inaugurated whereby bonuses will be awarded to the branch factories showing the highest rate of production. All employees of the local plant, including Superintendent Hollis, have already shared in several bonuses and it is their ambition to maintain a production of 100 tons daily. Plant machinery has been shifted for greater efficiency and other changes are in prospect which when completed will, it is expected, permit the breaking of all previous production records.

## Box Board Production for April

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 3, 1929.—April production of Box Board, based on reports to the Department of Commerce by 93 firms operating 120 plants (reports for earlier months including five concerns now out of business) was 87.1 per cent of capacity, as compared with 88.9 per cent in March and 80.4 per cent in April, 1928. In the following table the capacity data vary according to the normal number of working days in each month:

| Year and Month | Operation: Inch hours Capacity | Operation: Inch hours Operated | Operation: Per cent of Capacity | Production: Short Tons Capacity | Production: Short Tons Output | Production: Per cent of Capacity | New Orders Short Tons | Unfilled Orders (end of month) Short Tons |
|---|---|---|---|---|---|---|---|---|
| 1928 | | | | | | | | |
| Jan. | 10,372,900 | 7,833,458 | 75.5 | 273,125 | 203,882 | 74.6 | 204,128 | 80,417 |
| Feb. | 10,372,900 | 8,136,737 | 78.4 | 273,125 | 211,862 | 77.6 | 215,333 | 85,862 |
| March | 11,312,244 | 8,843,542 | 78.2 | 297,108 | 227,344 | 76.5 | 244,871 | 93,380 |
| April | 10,474,300 | 8,311,710 | 79.4 | 275,100 | 221,079 | 80.4 | 211,304 | 84,513 |
| Total (4 mo.) | 42,532,344 | 33,125,447 | 77.9 | 1,118,458 | 864,167 | 77.3 | 875,636 | ..... |
| May | 10,893,272 | 8,733,965 | 80.2 | 286,104 | 242,394 | 84.7 | 224,366 | 73,157 |
| June | 10,893,272 | 8,199,515 | 75.3 | 286,104 | 228,646 | 79.9 | 228,252 | 77,782 |
| July | 10,474,300 | 7,992,170 | 76.3 | 275,100 | 201,153 | 73.1 | 209,976 | 79,492 |
| Aug. | 11,312,244 | 9,236,068 | 81.6 | 297,108 | 230,750 | 77.7 | 236,682 | 81,816 |
| Sept. | 10,055,328 | 8,344,464 | 83.0 | 264,096 | 224,971 | 85.2 | 234,449 | 87,097 |
| Oct. | 11,384,820 | *9,430,136 | *82.8 | 299,052 | *244,894 | *81.9 | *241,491 | 81,022 |
| Nov. | 10,541,500 | *8,843,466 | *83.9 | 287,976 | *240,124 | *83.4 | *248,447 | 93,203 |
| Dec. | 10,541,500 | 7,631,500 | 72.4 | 287,976 | 205,546 | *71.4 | *198,648 | 94,174 |
| Total (year) | 128,628,580 | 101,536,731 | 78.9 | 3,401,974 | 2,682,645 | 78.9 | 2,697,947 | ..... |
| 1929 | | | | | | | | |
| Jan. | 10,963,160 | *9,297,029 | *84.8 | 287,976 | *248,290 | *86.2 | *241,086 | 87,974 |
| Feb. | 10,119,840 | *8,435,967 | *83.4 | 279,600 | *228,034 | *81.6 | *227,595 | 87,726 |
| March | 10,963,160 | *9,416,990 | *85.9 | 287,976 | *256,118 | *88.9 | *266,895 | 96,209 |
| April | 10,963,160 | 9,272,995 | 84.6 | 287,976 | 250,957 | 87.1 | 250,577 | 98,162 |
| Total (4 mo.) | 43,009,320 | 36,422,981 | 84.7 | 1,143,528 | 983,399 | 86.0 | 986,153 | ..... |

| Year and Month | Shipments of boxboard Short Tons | Stocks of boxboard, end of month Short Tons | Consumption of waste paper: Capacity Short Tons | Consumption of waste paper: Consumed Short Tons | Per cent of Capacity | Stocks of waste paper, end of month: At plants Short Tons | Stocks of waste paper, end of month: In transit and unshipped purchases Short Tons |
|---|---|---|---|---|---|---|---|
| 1928 | | | | | | | |
| January | 196,984 | 49,032 | 255,225 | 189,744 | 74.3 | 153,747 | 62,181 |
| February | 209,477 | 50,350 | 255,225 | 193,966 | 76.0 | 140,104 | 60,038 |
| March | 237,621 | 40,439 | 276,966 | 209,649 | 75.7 | 139,255 | 47,322 |
| April | 220,315 | 40,319 | 256,450 | 211,898 | 82.6 | 132,621 | 47,551 |
| Total (4 mos.) | 864,397 | ..... | 1,043,866 | 805,257 | 77.1 | ..... | ..... |
| May | 235,794 | 49,107 | 266,708 | 220,750 | 82.8 | 127,217 | 46,375 |
| June | 223,901 | 53,560 | 266,708 | 204,468 | 76.7 | 130,484 | 43,480 |
| July | 203,741 | 49,969 | 256,450 | 190,810 | 74.4 | 132,265 | 62,056 |
| August | 233,104 | 47,709 | 276,966 | 213,626 | 77.1 | 117,009 | 48,108 |
| September | 228,880 | 45,271 | 246,192 | 217,361 | 88.3 | 116,197 | 53,344 |
| October | *246,233 | 43,627 | 289,440 | 240,930 | 83.2 | 127,989 | 73,235 |
| November | *236,328 | 47,693 | 268,000 | 222,693 | 83.1 | 136,100 | 49,982 |
| December | *197,529 | 55,624 | 268,000 | 196,164 | 73.2 | 148,906 | 43,447 |
| Total (year) | *2,669,907 | ..... | 3,182,330 | 2,512,059 | 78.9 | ..... | ..... |
| 1929 | | | | | | | |
| January | *247,498 | 56,804 | 268,000 | 238,652 | 89.0 | 137,251 | 49,104 |
| February | *227,206 | 57,398 | 247,440 | 217,442 | 87.9 | 126,212 | 54,121 |
| March | *258,604 | 54,982 | 268,000 | 242,073 | 90.3 | 137,008 | 51,520 |
| April | 247,984 | 57,678 | 268,000 | 230,870 | 86.1 | 142,833 | 68,005 |
| Total (4 mos.) | 981,292 | ..... | 1,051,440 | 929,037 | 88.4 | ..... | ..... |

* Revised.

## Permanence of Paper

A letter submitting a detailed plan for further research related to the permanence of paper, and requesting their comments and their active cooperation in the work, was forwarded recently by the Bureau of Standards at Washington, D. C., to the following organizations: American Pulp and Paper Association; National Paper Trade Association of the United States; National Association of Book Publishers; National Research Council; and American Library Association. The program, in brief, is (1) tests of the current commercial rag fiber and wood fiber products including the fibrous raw materials, (2) tests of similar papers made in the bureau paper mill and therefore having a definitely known history, (3) inspection and testing of papers of known age, (4) study of means of overcoming influences found to be harmful to the life of papers, (5) research to find the nature of the reaction of paper celluloses to deteriorating influences.

# World's Largest Paper Machine Now At Work

## Mammoth Machine Constructed by the Backus-Brooks Co., For Great Lakes Pulp and Paper Co., Ltd., Completes Its Initial Seven Days Of Regular Operation At Fort William Plant—Machine Width Is 304 Inches, 32 Inches Greater Than Nearest Rival

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., June 3, 1929.—Mammoth in magnitude, impressive in its very appearance, the world's largest paper machine, which is recognized as a triumph in the science of engineering, last week completed its initial seven days of regular operation at the plant of the Great Lakes Pulp and Paper Company, Ltd., at Fort William, Ont. By the addition of this huge machine to the producing units in the industry, Fort William jumps into the vanguard of world news print production centers, with a total maximum daily output capacity of nearly 500 tons of paper from its two plants. By its operation Fort William now is the center of the largest of four great plants grouped in the region and owned by the same interests which are capable of producing every day in the year about 1,100 tons of paper. The other mills are established at Fort Frances, Kenora and International Falls. Fort William now possesses four producing paper machines, two at the Great Lakes plant with a daily maximum output of more than 310 tons of news print and two at the local plant of the Abitibi Power and Paper Company with a daily maximum production of 170 tons. The new machine at the Great Lakes plant is by far the largest ever manufactured. Its width is 304 inches, 32 inches greater than its nearest rival installed in the International Paper Mill at Gatineau, Quebec. Its length is nearly 300 feet and its total weight, without driving equipment, is between 1,500 and 2,000 tons. It will run off more than 1,500 feet of paper 25 feet 4 inches wide per second when operating at full blast. It is declared to be the most perfect piece of paper producing machinery ever built. The machine has been over two years under construction. Its installation by machinery and electrical experts has been under the direction and supervision of J. T. McLellan, chief of construction operations for the Backus-Brooks Company. On the first day of its regular operation 25 tons of its output were shipped to southwestern United States and later 90 more tons were carried by rail from the Great Lakes plant's new machine. W. F. Shafer is the new mill manager, he having come recently to Fort William to assume charge of the big lake head mill, in addition to the Kenora plant. Of wide experience, he is a veteran in the organization and was in complete charge when the Kenora mill first started production of paper. Within a month, he says, the new machine will be operating on a standard production basis and the mill will be employing between 350 and 400 men. All construction work is expected to be finished by the middle of July, including the huge new concrete dock on the Kam River, costing more than a quarter of a million dollars. The entire plant and facilities represents an expenditure of about $10,000,000.

### Danger of High Voltage in Paper Mills

Death, instantaneous and unheralded, lurks in the equipment used in many of the largest paper-making mills of Canada, according to a statement this week by Professor J. W. Shipley, head of the Department of Chemistry of the University of Manitoba and president of the Canadian Institute of Chemistry, a delegate to the American Electro-Chemical Society's convention in Toronto. For the past several years Professor Shipley has been conducting research investigation into the heating of water by electricity for domestic and industrial purposes. His work was started following the explosion of an electric hot water heater in the home of a Winnipeg citizen, during which the entire furnace was hurled through two stories and the roof of a substantially built home. The danger which lies in practically all the electric heaters at present could be obviated at little expense, Professor Shipley claims. Before long, he predicted, steps will have been taken to compel the manufacturers of such equipment to meet requirements which will eliminate any existing danger.

Use of high voltage was one of the chief features of the danger at paper mills. One big paper plant is operating its heaters on a voltage of 6,000 volts. Such high voltages, he states, cause arcing on the electrodes, flashes of intense heat beating through the steam bubbles on the electrodes. This has a faster action in decomposing the water than the electrolysis, water being decomposed ten times faster by arcing than by electrolysis. In several mills small explosions have already occurred, Professor Shipley stated. These explosions have taken place under conditions where large quantities of the gases were not present but were sufficiently strong to give evidence of the force which a big explosion would convey. While the danger still remained, it could be easily obviated by keeping the power down to the critical current density and would eventually have to be kept at that point. Electricity was becoming a great source of heat for both industrial and domestic purposes but at present it was carrying a tremendous danger if not handled properly.

### Thunder Bay Paper Plant at Capacity

The first water borne cargo of paper this season from the Thunder Bay Paper Company plant at Port Arthur, Ont., is destined for Chicago and consists of 1,000 tons. Other shipments are to follow at weekly intervals. Both paper machines are now running continuously, turning out about 225 tons of paper a day. The Thunder Bay Company is jointly owned by Abitibi and Canada Power and Paper, control having been secured from its previous parent company, Consolidated Water Power and Paper Co. of Wisconsin.

### Forestry Association Plans Lectures

The Canadian Forestry Association is continuing its policy of education under the lecture and traveling caravan system. Fourteen lecture parties are scheduled for the field in Canada during the coming month of June, which will constitute a new record. The cooperation of the Government services and the Forest Protective Association enables the association to utilize their forces to the fullest advantage and reach the maximum number of people at a minimum expense. New features of this year's campaign will be the modern talkie equipment on the Prairie car and on the new caravan, the gift of Colonel John H. Price, president of Price Bros., Quebec, which will tour Quebec and Northern New Brunswick.

### Howard Smith Improvements at Cornwall

The first unit of the new boiler plant of Howard Smith Paper Mills, at Cornwall, Ont., has now been completed, but will only be used as a standby plant until the company's complete power program has been rounded out. At present the company purchases the majority of its power requirements. However, it is thought that comprehensive plans have been drawn up embracing the construction of a large new power plant over a period of two or three years. On completion this should prove a substantial factor in the reduction of operating costs. Operations at the different plants of the company are being carried on at a high rate of capacity. Canadian Cellulose, a subsidiary, which produces soda pulp, is maintaining an output of approximately 50 tons a day. The company manufactures bleached soda pulp and the majority of its output goes to the parent company, though a certain amount is sold on the open market. It is felt that the capacity of his plant will ultimately be extended. No changes have been made in the operations undertaken at Windsor Mills, which were recently acquired from the Canada Power and Paper Corporation.

This unit is primarily a kraft paper producer. Howard Smith's other plants are situated at Beauharnois and Crabtree, Quebec, and two at Cornwall, Ont. Earnings of the company are reported to be slightly in advance of last year, which can be considered favorable in the light of the last financial statement issued by the company. This showed earnings applicable to the common stock of $2.28 a share.

### Pacific Coast Paper Mills Expand

Satisfactory operating results are reported by the Pacific Coast Paper Mills, Inc., the American subsidiary of the Westminster Paper Company at New Westminster, B. C. It will be recalled that the Pacific Coast Paper Mills was barred from placing its British Columbia-made products on the United States market by reason of a high tariff wall and in order to get around this obstacle, the company established a sub-plant at Bellingham, Wash. The new plant was registered in the United States in 1906 as the Pacific Coast Paper Mills, Inc. The Bellingham plant is producing manufactured paper products similar to those of the parent company in New Westminster and its products are being handled by 40 distributors in Washington, Oregon, California, Idaho, Montana and Utah. During 1928 sales amounted to $350,000 and it is anticipated that the figure for this year will be at least double that amount. In order to take care of the increased demand the company has under way plans for the extension of its Bellingham plant. The firm has issued bonds valued at $50,000 for the purpose of installing additional equipment. This machinery includes new feeders, screens, and additional driers to increase the speed of the paper machines. Extra paper towel folding equipment and a new toilet roll winder will also be installed.

### Pulpwood Survey Was Over-rated

Timber surveys of the east and west sides of Lake Winnipeg have proved disappointing. Only 2,500,000 cords are available, much less than the anticipated lease of the Manitoba Paper Company. The Hon. Charles Stewart, Minister of the Interior, denies that the Government pledged itself to a matter of 6,000,000 cords of pulpwood when the agreement was entered into with the Manitoba Paper Company, but stated that the company's requirements would be met as far as possible. Manitoba Paper is now asking for an enlargement of the reserve set aside for the selection of pulpwood, the enlargement to include the stretch of country north of Lake Winnipeg through which the Nelson River runs. Further, the company desires to include the territory on the west side of Lake Winnipegosis, where a heavy stand of pulpwood has been found.

### Board Manufacturers Are Perturbed

A somewhat embarrassing situation in the board manufacturing end of the Canadian paper industry arose at a meeting of the Board Section of the Canadian Pulp and Paper Association a few days ago in Montreal. It appears that the American board mills have been over-producing during the past eighteen months, and are now endeavoring to unload their surplus in the Canadian market at cut prices. At the same time the normal demand for board in the States has materially lessened, the two factors demoralizing the United States markets. The United States manufacturers have been endeavoring to pass the condition on to Canada by shipping board into Canada at prices that completely eliminate profits. The situation has been accentuated by some over-production by the Canadian mills, so that there is now a condition that is exceedingly difficult to deal with.

The Canadian manufacturers are sending a delegation to Ottawa to consult with Government officials in the hope that some measure of relief may be discovered, though what can be done is not very obvious. It is pointed out that Canadian tariff schedules cannot be changed by any Government official. There is, in fact, no way to modify customs rates except through legislation. In the United States, existing tariffs may, in certain cases and in certain ways, be modified when certain crises arise, similar to the board crisis. It is vaguely hoped that the present edgy feeling in Ottawa toward the United States may induce Government officials to consider the board manufacturers' plaint in a sympathetic light, at least, if it may be found that nothing in the way of relief can be offered them.

### Notable Howard Smith Calendar

A unique and attractive calendar sent out by the Howard Smith Paper Mills is in the hands of paper dealers and printers all over Canada and features twelve reproductions in full color of Canadian paintings by leading Canadian artists. The calendar was created in an endeavor to stimulate appreciation of Canadian art on the part of the people of the Dominion and facsimiles of the illustration, suitable for framing, can be had on payment of a small fee. In a circular accompanying the calendar it is stated: "Canada has made wonderful progress since the days of the first pioneers—primarily an agricultural people, for traders, woodsmen, tillers of the soil, who, by their toil and resourcefulness have blazed the way in founding and developing her natural resources. The Howard Smith Paper Mills, through the courtesy and co-operation of the Toronto Art Gallery, Jenkins Art Gallery and C. Howard Smith, are enabled to present this splendid series of reproductions, giving a wider distribution and a knowledge of the work of Canadian painters to the general public who are more and more showing a growing and intelligent appreciation of national art."

### Notes and Jottings of the Trade

At the annual meeting of the Ontario Division of the Canadian Manufacturers' Association, held at Hamilton, Leo E. Charles, secretary-treasurer of the Garden City Paper Mills, and also president and managing director of the Victoria Paper and Twine Company, was elected a member of the executive committee of the Ontario division for the ensuing year.

A. E. McLean, general manager of the Bathurst Power and Paper Company, Bathurst, N. B., was recently elected a member of the executive committee of the Maritime Division of the Canadian Manufacturers' Association, the convention of which was held in St. John.

Building Products, Ltd., Montreal, manufacturers of wall board and similar products, have developed a new department for the manufacture of paper boxes and cartons. Initial production will be on a moderate scale until the market for the new products has been developed. Raw materials will be obtained from the St. Maurice Valley Corporation, which is the parent organization, It is understood that the company have also developed a new type of asbestos shingle which is in the form of the old wooden shingle.

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## Du Pont Cellophane Co. Changes

The Du Pont Cellophane Company announces the following changes:

O. F. Benz, director of sales, spent a month on the Pacific Coast reviewing the marketing problems among the dried fruit packers, bakers, meat packers, candy manufacturers and other industries using Cellophane to package their merchandise.

W. O. Henderson has been appointed assistant eastern district sales manager. He was New England sales representative for several years previous.

R. E. Henning has been appointed sales correspondent and Clyde E. Rapp as assistant to H. C. Broems in the Trade Record Section.

William Rheaume, formerly of the Chicago district sales office, is now covering Tennessee, Mississippi, Alabama and Louisiana with headquarters in Nashville.

Robert J. Black, formerly with Calavo Growers of California, has joined the Boston sales office.

E. F. Wilson, former Manhattan representative, has been transferred to a Southern territory with Atlanta for his headquarters.

Leonidas B. Dickson has been appointed to the metropolitan sales force. He was formerly a member of the Package Development Section at Park avenue, sales headquarters.

H. G. Montell is now representing the Company in Baltimore, Washington and Richmond, with headquarters in Baltimore.

# Demand For Paper Rather Quiet In Chicago

## Seasonal Slump Attributed to Decoration Day Holiday, Which Cut Large Slice Out of Week's Business—News Print Paper Continues In Excellent Request — Paper Board Market Dull With Prices Easy—Wrapping Paper Becomes More Active Generally

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., June 3, 1929.—Memorial Day cut a huge slice out of last week's business in Chicago paper circles. Conditions were, therefore, somewhat quiet as June introduced itself, with a continued increase in the demand for news print.

### Board Market Reported Dull

The board market is still reported dull with prices low and some slowing up of demand. Fine papers are in good shape with dealers optimistic while prices are firm and demand fair in the book lines. More activity in wrapping paper is reported while from the ground wood offices comes news of a slight curtailing in production with slackening demand. The waste paper market is fairly active, particularly in the lower grades.

### Mulch Paper Described to Paper Salesmen

The Salesmen's Association of the Paper Industry, Chicago Division, spent a profitable Monday noon on May 27 listening to Mr. Van Der Slice, of the International Paper Company, Mulch Paper Division. Mr. Van Der Slice spoke at the regular Monday meeting of the association held at the Hamilton Club and took the opportunity to explain many interesting features of the mulch paper which is meeting with such an enthusiastic reception from those engaged in scientific farming. The new paper is already widely used in plant cultivation, the paper being spread over the plant in such a way that the plant grows through it, eliminating weeds, speeding up the plant growth, etc. The meeting of the Salesmen's association was well attended and profitable. It is possible that this feature of May 27 may be the last big event of the association's programs, until the Monday following Labor Day. Golf events, of which the second is to be staged the latter part of this month, are getting the attention of the salesmen.

### Mrs. Inlander Dies Suddenly

The many acquaintances of Samuel Inlander, president of the Inlander-Steindler Paper Company, are sympathizing with him in the loss of his wife, who died on Monday evening, May 27, after an illness of only one day. Death was reported to have been hastened by the loss of a granddaughter on the previous Sunday. Mrs. Inlander was buried at Furth Chapel, Chicago, on May 29. Mrs. Inlander had a large acquaintance among those identified with paper and especially with members of the Chicago Paper Association, of which Mr. Inlander is an active member.

### News of the Trade

A booklet describing the features of the Beckett Text Line has been sent out to the printing and advertising trades by the J. W. Butler Paper Company, distributors in this territory. The booklet illustrates the complete Beckett line which is a product of the makers of Buckeye Cover and Beckett Cover. It comes 70 to 80 pounds to the ream, in 25 x 38 inch size and in White and India colors and in either Laid or Wove finishes. The paper is described as being very effective for advertising purposes, having a good printing finish, strength and attractiveness. The sample book contains a number of designs furnished through the courtesy of actual users and a few blank pages for determining the exact quality of the paper.

"Farm Wastes," a four page pamphlet published by the Cornstalk Products Company, Inc., of Danville, Ill., contains a number of items of interest to the paper trade, including discussions of the different pulps used in paper making and of cornstalk paper in particular.

The Warren Manufacturing Company and its Chicago distributing office at 111 West Washington street, is meeting with great success in the sale of Riegel's Glassine Papers, which are proving of great help in solving packaging problems.

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### Hawley Pulp & Paper Co. Gets Refund

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 29, 1929.—The Hawley Pulp and Paper Company, Oregon City, Ore., has been given a refund by the Bureau of Internal Revenue of $24,193.70 which was an overassessment of income and profits for the year 1920. A hearing was held in the case February 6, 1929. The Bureau in announcing the decision says:

The above overassessment is caused by a redetermination of the profits tax under the provisions of section 327 and 328 of the Revenue Act of 1918 by reason of the fact that certain valuable assets used in the business were acquired by the taxpayer without consideration and cannot therefore be included in the statutory invested capital, and that the cost of remodeling and improving such assets was charged to expense and cannot be identified for restoration to the capital account. Accordingly, the profits tax has been determined in an amount which bears the same ratio to the taxpayer's net income as the average taxes of representative corporations engaged in a like or similar trade or business bear to their average net incomes for the same year. Sections 326, 327, and 328 of the Revenue Act of 1918; Appeal of H. T. Cushman Manufacturing Company 2 B.T.A. 39; Akron Rubber Mould and Machine Company v. Commissioner 12 B.T.A. 1252.

The present determination of the profits tax liability, as above, is in accordance with a stipulation approved by the United States Board of Tax appeals in the instant case, Docket No. 15541.

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### Strathmore To Hold Convention June 24-25

[FROM OUR REGULAR CORRESPONDENT]

WORONOCO, Mass., June 4, 1929.—Plans are being completed for the 10th annual Strathmore Paper Company convention to be held at the Memorial Hall here June 24-25. About 100 visitors are expected including paper merchants and mill representatives from various parts of the United States. The opening meeting, the 24th, will be for merchants only and the meeting that afternoon will be a general meeting for all attending.

Horace A. Moses, president of the concern, will open the convention with an address of welcome and Vice President B. A. Franklin will speak on "The Future of the Paper Merchant and a Little About the Present." Monday night there will be a steak roast at Mr. Moses' farm.

Tuesday morning's session will be devoted to addresess on the advertising program for the year and new developments in the converter's field, with especial reference to the new expansion of the Old Colony Envelope Company in Westfield and Tuesday afternoon to recreation. The committee in charge consists of Col. B. A. Franklin, B. H. Hughes, sales promotion manager, H. E. Riggs, advertising manager, and C. F. Norton, assistant sales manager.

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### Salt Cake Remains On Free List

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 3, 1929.—As the Tariff Bill finally passed the House, salt cake remains on the Free List. The proposed amendment to make it dutiable at $4 per ton was withdrawn at the last moment.

# Trade Mark Department

CONDUCTED BY NATIONAL TRADE-MARK CO., WASHINGTON, D. C.

The following are trade mark applications pertinent to the paper field pending in the United States Patent Office, which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade Mark Company, Barrister Bldg., Washington, D. C., trademark specialists. As an additional service feature to its readers, PAPER TRADE JOURNAL gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering.

SERV A DISH—No. 269,971. Michigan Metal Products Company, Battle Creek, Mich. For paper plates and paper trays.

SIMPLEX—No. 281,172. Simplex Paper Box Company, Lititz, Pa. For paper boxes.

SECURITY PAPER written on a star.—No. 270,927. Gurney Security Paper Company, Ins., Brooklyn, N. Y. For safety paper.

UNIVERSAL SECURITY PAPER—No. 270,928. Gurney Security Paper Company, Inc., New York City. For safety paper.

WEDDING CHESTS—No. 275,123. Old Colony Envelope Company, Westfield, Mass. For writing and printing paper and mailing envelopes.

T BONE—No. 278,989. Hanchett Paper Company, Chicago, Ill. For wrapping paper.

CALENDAR OF ACTIVITIES—No. 277,986. L. Louise Woods, Akron, Ohio. For engagement calendars.

DIOGENES—No. 280,705. Emil Heumann, New York City. For toilet paper.

GLASSITE—No. 278,280. Deerfield Glassine Company, New York City. For greaseproof paper.

SILVERAY—No. 280,288. Seaman Paper Company, Chicago, Ill. For book papers, cover papers, cut cards, announcement paper, blotting paper, etc.

## Charles A. Esty Honored

The Kiwanis Club of Worcester, Mass., at its weekly luncheon meeting held at the Bancroft hotel. May 24, presented to Charles A. Esty an engraved testimonial done on parchment and bound in leather as a mark of esteem from his fellow members and in appreciation of his services to the club during his membership. Mr. Esty recently resigned from the club owing to the fact that his duties as Managing Director of the new Carter, Rice & Co., Corporation, formed as the result of the merger of the Charles A. Esty Paper Company, of Worcester and Boston with the Carter, Rice & Co., Corporation of Boston, required his removal from Worcester. Before the presentation of this testimonial by Kiwanian Thomas E. Babb, Jr., past International Kiwanis trustee and the first president of the Worcester Kiwanis Club, Stuart M. Anson, president of the club said, "Some months ago our board of directors passed a resolution expressing our affections towards our good friend Charlie Esty who has had to resign from the club. Today it is presented to him in the form of a testimonial written by Tom Babb."

In presenting the testimonial Kiwanian Babb said, "On the lips of those whom we honor today—the members of the Grand Army of the Republic—is the word "Comrade." "They speak of the comrades who have died. Why did they die? Comradeship was denied to one of the races of man. Civilization in its broadest sense was threatened. These men went to war to correct that error for all time. Kiwanis always emphasizes the human and spiritual values of life. That is supposed to be the first aim of a Kiwanian. We Kiwanians today are offering a testimonial to one of our members who is living, while the members of the G. A. R. pay tribute to the dead. This may be said to illustrate the advance which has been made in this matter of comradeship.

We offer testimony to the living in the belief that such evidence of fraternal spirit tends sharply to reduce the probability of strife, which is the first stage of death and war. We believe that this idea multiplied and extended as service clubs may extend it, constitutes a peaceful war to stamp out strife. The occasion is appropriate and I have the honor and great personal satisfaction to read and present a testimonial to our friend and comrade—Charles A. Esty."

This testimonial was bound in leather furnished by Kiwanian Joseph S. Wesby of J. S. Wesby & Sons, bookbinders. It was written by Kiwanian Thomas E. Babb, Jr.; designed by Kiwanian Rae M. Spencer of The Davis Press, and engraved by Kiwanian Bertice W. Eames on parchment provided from the stock of the Charles A. Esty Paper Company, Division of Carter, Rice & Co., Corporation by Kiwanian Graham Blandy.

## Canadian Lumber Exports Increase

Exports of lumber for the month of April show a substantial increase over April of last year, the advance being over $600,000. Following are the figures for the month in both years, as announced by the Dominion Bureau of Statistics:

Planks and Boards:

| | April 1929 | April 1928 |
|---|---|---|
| Spruce | $990,720 | $1,010,716 |
| Pine | 637,151 | 478,229 |
| Douglas Fir | 602,488 | 562,014 |
| Birch | 330,092 | 261,570 |
| Hemlock | 221,662 | 121,679 |
| Cedar | 146,669 | 127,544 |
| Maple | 52,780 | 36,954 |
| Total | $2,981,562 | $2,598,706 |
| Square timber | 253,448 | 243,115 |
| Laths of wood | 322,868 | 373,825 |
| Shingles of wood | 709,215 | 476,061 |
| Pickets and Shooks | 59,091 | 24,639 |
| Veneers and Plywoods | 20,526 | 17,811 |
| Grand total | $4,346,710 | $3,734,157 |

Imports are also given by the bureau. The amounts, however, were small, and divided among a score of different kinds of wood.

## Boston Paper Market Conditions

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 3, 1929.—The paper market here is holding its own generally. Dealers as a whole appear to be satisfied with the volume of business for the season of the year. The torrid spell last week stimulated business in some lines, according to a member of the trade, especially in coarse papers. The call for bonds and ledgers has also been good.

The box board market is comparatively quiet and is expected to remain so until after July 4. While price levels continue to be firmly held, dealers do not look for higher values than $37.50 to $40 for filled news board and no higher than $37.50 for chip board. Chip board is also still offered at $35.

Some lines of old papers are steady, although the tendency is downward on old kraft. It is reported to be difficult to sell old kraft. Foreign manila rope shows a tendency to advance and is quotable at 5.00 to 5.25, compared with a former range of 4.50 to 4.75. New and old domestic rags are unchanged in price. Foreign rags maintain the same levels. A carload of new No. 1 shirt cuttings was among the recent sales at 9 cents, but a higher quality of shirt cuttings is commanding 10 cents.

## To Start Wishkah River Pumping Plant

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., May 29, 1929.—The new Wishkah River pumping plant of the Grays Harbor Pulp and Paper Company, which will lift up to 10,000,000 gallons of water daily over the Wishkah-Last Hoquiam divide, will be ready for operation by June 1, according to report from the Parker-Schramm Company, Portland, who are in charge of construction.

This pumping unit is to be used as a stand-by for the big Hoquiam pulp mill in case of shortage in the East Hoquiam River, where the chief water source is located.

# CONSTRUCTION NEWS

*A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills*

## Construction News

**Kalamazoo, Mich.**—The Kalamazoo Vegetable Parchment Company, Parchment street, has awarded a general contract to the O. F. Miller Company, Pratt Building, for a new addition to its mill, to be one-story, brick, reported to cost close to $100,000, with machinery. Work is scheduled to begin at once. Billingham & Cobb, 120 Woodward avenue, Kalamazoo, are architects and engineers.

**St. Helens, Ore.**—In connection with proposed mill of the Fir-Tex Insulating Board Company, Pacific Building, Portland, Ore., on large tract of land at St. Helens, recently referred to in these columns, the company is said to be arranging for an immediate expenditure of close to $100,000, for clearing the site, installing water mains, laying a spur track and other miscellaneous preliminary work. This development will be placed in progress at an early date. It is understood that foundations for the initial mill units will be laid early in August. Entire project is reported to cost close to $2,000,000. A. E. Millington is vice-president and general manager.

**San Francisco, Cal.**—The Fibreboard Products Company, Montgomery and Francisco streets, has awarded a general contract to Barrett & Hilp, 918 Harrison street, San Francisco, for extensions and improvements in local plant, reported to cost about $25,000. Work will be placed under way at once. Leland Rosener, 233 Sansome street, San Francisco, is architect. The company is a subsidiary of the Paraffine Companies, Inc., same city.

**Chicago, Ill.**—Officials of the F. C. Traver Paper Company, 358 West Ontario street, have arranged for a change of company name to the Traver Paper and Manufacturing Company. The organization is entering into the manufacture of paper specialties of various kinds, and the new name better identifies these activities. Increased floor space has been provided, and considerable new machinery installed to provide for extensive output. An increased working force will be employed.

**Milwaukee, Wis.**—In connection with current expansion program recently referred to in these columns, the American Lace Paper Company, 908 Juneau avenue, is said to have further plant additions in contemplation, consisting of two or three multi-story units to cost upward of $800,000 with machinery. No architect has as yet been commissioned to prepare plans and the development is in a preliminary stage.

**San Francisco, Cal.**—Officials of the General Paper Company, San Francisco, and the Western Paper Company, Los Angeles, have received permission from the California State Corporation Commission to carry out their proposed merger, issuing 2500 shares of $100 par value stock of first noted company in exchange for business and assets of the latter. The General Paper Company is capitalized at $500,000, and in connection with the acquisition of the Western company it is purposed to carry out a general expansion program in the Southern California district. The purchased organization will be operated as the branch of the General company in that section.

**Appleton, Wis.**—The Fox River Paper Company, South Appleton street, has awarded a general contract to the C. R. Meyer & Sons Company, 50 State street, Oshkosh, Wis., for its proposed new finishing mill addition, to be two-story, instead of one-story, as previously announced, 85x117 feet, reported to cost about $70,000, with equipment. Superstructure will be placed under way at once. A contract for millwork in the unit has been let to the Standard Manufacturing Company, Appleton.

**Joliet, Ill.**—The United Wall Paper Factories, Inc., 137-71 West Side avenue, Jersey City, N. J., has acquired a controlling interest in the Eagle Paper Company, Joliet, totaling about 6,750 shares of stock of 7,000 shares outstanding, and will be active in management in the future. The Eagle mill at Joliet has been running on a basis of about 15,000 tons of wall paper raw stock per annum, and the purchasing company will continue operations on that schedule, probably increasing capacity at a later date. The United company also has a mill at Joliet, and it is understood that this plant will be continued in service as heretofore, as well as the other mills of the company located at Jersey City; Hudson Falls and Schuylerville, N. Y.; York, Pa.; and Chicago, Ill. Robert E. Griffin is president of the last noted company, and George N. Brown, treasurer.

**Detroit, Mich.**—The National Automotive Fibres, Inc., San Francisco, Cal., has plans maturing for the construction of a new branch plant at Detroit; details and estimates of cost have not been announced. It is understood that the plant will represent an investment in excess of $50,000, and will be given over to the production of materials for the automobile industry. The company now maintains a plant at Oakland, Cal., and as soon as the Detroit mill is in production the first noted plant will be used exclusively for Pacific Coast trade.

**New York, N. Y.**—The Sheffield Pulp Products, Inc., care of Howard A. Marx, 44 Wall street, attorney, recently formed with capital of $100,000, is said to be planning the operation of a plant in this vicinity for the manufacture of paper products.

**San Francisco, Cal.**—The Consolidated Paper Box Company, 346 First street, comprising a recent merger of several paper box manufacturing companies in that city, is reported to have negotiations in progress for the acquisition of other interests to provide for considerable expansion in present organization and production. Three other companies, it is said, will come into the merger, these being the Fleishhacker Paper Box Company, the Boxboard Products Company, and the Gilman-Petterson Carton Company, all with plants at San Francisco. W. J. Warren is president of the consolidated company, which has authorized a financing program to provide about $150,000, this fund to be used for general expansion primarily in connection with proposed acquisitions.

**Long Island City, N. Y.**—The Union Bag and Paper Corporation has arranged for the sale of its three-story plant at the corner of Third street and Van Alst avenue, aggregating about 55,000 square feet of floor space in main unit, 80x200 feet, and one-story extension 75x100 feet. The purchaser is Irving I. Lewine & Co., New York. The Union company will continue to occupy the premises under a lease with the new owner.

**Indianapolis, Ind.**—The building program of the United States Corrugated Paper Box Company, 1315 Martindale avenue, referred to in these columns last week, comprises rebuilding of a

# Because it is RIGHT

BIRD MACHINERY

**The Vickery Doctor is rapidly becoming a standard application on dryers, calenders, press rolls and breast rolls—on every paper mill roll or cylinder.**

**Paper makers are finding that the Vickery Doctor is the one doctor that is right—flexible, fool-proof, properly applied to each roll.**

**Have you tried the Vickery Doctor?** ***You can—at our expense.***

**BIRD MACHINE COMPANY**
**South Walpole • • Massachusetts**

# The Vickery Doctor

unit recently destroyed by fire, and not a new addition. The company has authorized plans for the reconstruction, consisting of two-story storage and distributing plant, reported to cost close to $175,000, with equipment. H. J. Lacey is president, and R. J. Hauser, secretary and treasurer.

**New Orleans, La.**—The O. B. Andrews Company, Chattanooga, Tenn., manufacturer of corrugated fiber boxes and containers, including folding cartons, has arranged for a lease of a building held by the Southern Railway Company, at New Orleans. The building will be remodeled and improved and will be occupied as a branch plant for regular line of production. The project is estimated to cost in excess of $100,000, including equipment.

**New York, N. Y.**—Coy-Hunt & Company, 77 West Houston street, paper stocks, has leased the seven-story building at 697-701 Greenwich street, corner of Tenth street, and will occupy for new company headquarters, storage and distributing service. It is understood that present establishment will be removed to new location at an early date.

**Philadelphia, Pa.**—The Federal Container Company, 56th street and Paschall avenue, has awarded a general contract to Barrett & Hilp, San Francisco, Cal., and Philadelphia, Pa., for proposed new addition to plant, comprising two two-story units, 47x325 feet, and 91x325 feet, one building to be used for manufacturing service, and the other for general storage and distributing purpose. The expansion is estimated to cost about $175,000, including equipment. The company is a subsidiary of the Paraffine Companies, San Francisco, and plans for the new units were drawn by Leland S. Rosener, 233 Sansome street, last noted city, architect for parent organization.

**Cornwall, Ont.**—The Howard Smith Paper Mills, Ltd., Montreal, Que., has completed the first unit of new steam power house at local mill at a cost approximating $300,000, and will place the plant in service at an early date. The company is now operating its Cornwall mill, as well as other plants on a capacity basis aggregating 38,500 tons of finished paper stock a year, and it is proposed to continue on this schedule for an indefinite period. Operations of the Canadian Cellulose Company, a subsidiary organization, specializing in the production of bleached soda pulp, are likewise at capacity, developing an output of about 50 tons of finished material a day. Preliminary plans are under consideration for extensions in the last noted plant to bring about a rating of close to 75 tons daily, all of which will be used by the parent organization.

## Wood Pulp Movement From Canada To Start

OSWEGO, N. Y., June 1, 1929.—Wood pulp for the Taggart Paper Bag Corporation will start coming in over Lake Ontario from Canadian ports within a few days. The baled pulp will be transshipped into railroad cars on the Ontario and Western Railroad and then taken to the mill. Plans call for a supply sufficient for a year which will be brought in during the remainder of the present season of navigation. Joseph A. Quinlan, traffic manager of the St. Regis Paper Company and allied firms, has returned from Quebec and Three Rivers where he made all arrangements for the shipping and it is expected that the Ontario and Western terminal will be used for docking the steamers as soon as the movement is started.

## Boston Paper Trade Happenings

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 3, 1929.—John Carter & Co., Inc., and the Storrs and Bement Company, have become selling agents for a new line of cover paper, Roloc Cover, manufactured by the Chemical Paper Manufacturing Company, Holyoke, Mass.

Arthur C. Hall, treasurer of John Carter & Co., Inc., returned from a vacation at his camp in New Hampshire, on account of the death of his mother, who was 91 years old, at Salem, N. H.

Max Frank, buyer for John Carter & Co., Inc., who recently underwent an operation for the amputation of a leg, has returned from the hospital to his residence.

## The Boss Machine Tender

Beside the Fourdrinier he idly strolls
As, bored to death, for some relief he sought;
With linear feet per second turn the rolls,
Many feet wide. Lo! Paper—"Wings of Thought!"

For reason unexplained, but "just like that!"
The delicate sheet is "broke": Now, watch our friend
Mount the machine with quickness of a cat,
Back to its channel its breached lightning send!

This gentleman is "boss" of the machine,
"Deus ex machina" Caesar would have said,
Except before the Fourdrinier was seen
Julius Caesar was for centuries dead.

Yet "Omnia Gallia" bred Monsieur Fourdrinyea
Whose name we honor as an English word;
Daguerre we treat in quite a different way
As photograph is Greek, which is absurd!

Some years ago my friend of the *Traffic World*
Published a pome of mine as he hadn't ought:
Them was my busy days, yet I unfurled
Paper as "Traffic Manager of Thought."

Them times *was* busy—two jobs day and night
Managin' Paper'n traffickin' for Uncle Sam
To lick der Kaiser 'cause I couldn't fight,
I bein' deef, my sight not worth a damn.

The subject of this pome is lost in smoke
In which my cigarette surrounds me here.
Hail to the Chief—the Boss Who Splices "Broke"!
And Hail to Paper's Big Boss—Fourdrinier!

CHARLES H. TIFFANY
Boston, May 28, 1929 Ex Traffic Manager of Paper

## Lake St. John Co. Makes Good Report

MONTREAL, Que., June 3, 1929.—The first annual report of the Lake St. John Power and Paper Company has just gone forward to shareholders. It covers the year ending February 28 last and shows gross profits for the year of $920,566. After deducting depreciation reserve of $192,899, interest charges of $564,509, and income tax of $13,000, there remained a net balance of $150,157. This was more than sufficient to cover dividend requirements on the 7 per cent preferred stock of $2,000,000. As no dividends were paid, however, the balance was carried forward to profit and loss account.

Dealing with the general situation, the president stated that the figures were not representative of what the company could do under normal conditions, as the first news print machine did not start operations until the middle of February, and the second machine about the middle of March. Earnings were cut down for a considerable time, while the machines were being tuned up. At present, however, they are working very satisfactorily and in February average production reached 249 tons per day. For the present, however, as the result of the general agreement, the company's output will be curtailed to about 75 per cent of capacity. But it is hoped that the step taken by the combined mills will prove in the end a very constructive one for the company.

## George W. Mead Recuperating

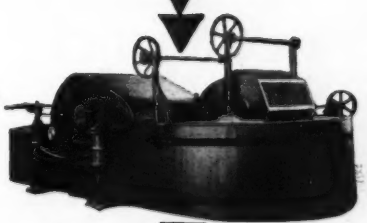
[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 3, 1929.—Gradual improvement is being shown by George W. Mead, president of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis. Mr. Mead submitted to an operation about a week ago at Mayo Brothers' clinic, Rochester, Minn., for the removal of stomach ulcers, and is recuperating in the hospital there.

# Modernized Beaters

THE Downingtown Holland Beater incorporates every refinement for simplicity and economy of operation required in a modern beater room.

Write for our new 20 page bulletin No. 113 describing our complete line of modern beaters,—no obligation whatever.



**DOWNINGTOWN**
**Manufacturing Company**
**Downingtown Pa. U.S.A.**

# Obituary

### Lewis S. Barker

[FROM OUR REGULAR CORRESPONDENT]

DOWNINGTOWN, Pa., June 3, 1929.—Lewis S. Baker, well-known traveling salesman, of the Downingtown Manufacturing Company, manufacturers of paper mill machinery, died suddenly at his home on morning of Memorial Day.

Mr. Barker was forty years of age and had been with the Downingtown Company since 1913, having been employed in various capacities, such as machinist, erecting engineer, and sales engineer, being well known in the Penna.-New Jersey territory.

### Liva E. Barnes

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., June 3, 1929.—Philadelphia associates of the Huff, Barnes & Opie Wholesale Paper Company, of Pittsburgh, Pa., one of the largest of Western Pennsylvania paper dealers, were informed of the passing of Liva E. Barnes, of the firm, while on a South Sea Island cruise in mid May. Mr. Barnes was a frequent visitor to the local trade and was noted as a world traveler. His death took place while he was navigating off the coast of Java according to a telegram received at the Pittsburgh offices of the company. The message said that Mr. Barnes, who was president of the company, died from a stroke and was buried in the Pacific Ocean off the Java coast. He left Pittsburgh in January accompanied by his daughter, Mrs. Richard C. Plummer, of Pittsburgh, and a photographer, who was engaged in making pictures of interesting scenes and events on the world cruise he had undertaken earlier this year. A special dispatch on his death was sent to associates here during the week informing them of his sudden demise.

### William E. Coe

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., June 3, 1929.—Following his retirement from the Garrett Buchanan Company because of poor health a year and a half ago, William E. Coe, former assistant treasurer of the company died at his home in Edgewater Park, N. J., last Tuesday. Mr. Coe retired from the firm just a few months before the death of the late president of the company, John H. Sinex, to retrieve his health but made no improvement and gradually declined until his death from euremic poisoning in his 66th year of age. He was connected with the Garrett-Buchanan Company for 22 years and previous to joining that firm was associated with the Whiting Paper Company in a similar capacity in its credit branch. He was a charter member of the Penn Athletic Club and of the Riverton Country Club. For 23 years he was an elder of the Beverly Presbyterian Church. Surviving are his wife, and son, Glenn W. Coe. Officials of the Garrett-Buchanan Company attended his funeral services and burial in Monument Cemetery, Beverly, N. J.

## International's Quarterly Report

The International Paper and Power Company and subsidiaries report for the quarter ended March 31, 1929, net income of $480,423, after depreciation, amortization, interest, Federal taxes and dividends on preferred and minority common stocks of subsidiaries, equivalent to 53 cents a share earned on 904,002 shares of 7 per cent preferred stock. After payment of preferred dividends and dividends on class A common stock there was a deficit of $1,720,658.

Above earnings do not include the undistributed portion of earnings accruing on the common shares of New England Power Association held by International Paper Company.

A. R. Graustein, president of International Paper and Power, points out that, although the first quarter income represented the fifth successive quarter in which net has shown a decline from the preceding quarter, a reversal of this trend is indicated by an analysis of the March quarter earnings. Of the total of $480,422 for the quarter only $66,190 was earned in January and February combined, while $414,232 was earned in March. "The improvement in March earnings is expected to be maintained in the current quarter," Mr. Graustein said.

## Fox River Valley Safety Conference Plans

APPLETON, Wis., June 3, 1929.—Several important speakers have been engaged for the fifth annual Fox River Valley Safety Conference, to be held June 11 at Manitowoc, Wis. About 1,500 men from industries of north-eastern Wisconsin are expected to attend.

Jamie Heron, of Chicago, will speak on "Safety in a Changing World." Dr. William Ganfield, president of Carroll College, Waukesha, Wis., will speak on "The Great Escape." Another speaker will be Judge Levi Hall, of Minneapolis, Minn., whose subject is "The Motorists' Responsibility in the Observance and Enforcement of Traffic Laws."

Sectional meetings will be held, the largest of which will be that of the pulp and paper industry. At the general closing session in the evening, the speaker will be Phil Grau, safety expert of Milwaukee, Wis.

## News of the Wisconsin Paper Industry

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 3, 1929.—G. E. Buchanan, secretary of the Appleton Wire Works, Appleton, Wis., has been re-elected as moderator of Winnebago district of the Congregational churches of Wisconsin.

Frank P. Vaughan, manager of the Bay West Paper Company, Green Bay, Wis., was honored by his fellow townsmen recently with election as president of the Lions Club of that city.

Announcement is made of the marriage at Neenah, Wis., last week of William R. Kellett, of Neenah, and Miss Mabel Hooper, of Oshkosh, Wis. The couple is enjoying a cruise of several weeks on the Great Lakes. Mr. Kellett is technical staff superintendent of the Kimberly-Clark Corporation's mills at Niagara Falls, N. Y., and Neenah, Wis.

## Patent Granted for Paper Pulping Machine

[FROM OUR REGULAR CORRESPONDENT]

HOOSICK FALLS, N. Y., June 1, 1929.—Walter Werner, chief engineer of the Noble & Wood Machine Company, has been granted a patent for a paper pulping machine and beating engine by the United States Patent Department at Washington. His application for the paper pulping machine was made in January, 1927, and for the beating engine in February of the same year. Both patents have been assigned to the Noble & Wood Company of this city. Mr. Werner's latest inventions are in line with others he has perfected during his many years of service at the local plant.

## John Sensenbrenner Takes Up Motor Boating

[FROM OUR REGULAR CORRESPONDENT]

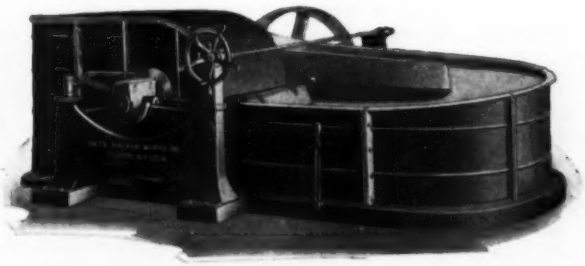
APPLETON, Wis., June 3, 1929.—John Sensenbrenner, of the Kimberly-Clark Corporation, Neenah, Wis., will find his pleasure this summer in a new cabin motorboat built for him at Benton Harbor, Mich. The craft is 43 feet long, and has twin motors of 500 h.p. Mr. Sensenbrenner traveled from Benton Harbor to his home with the boat after its completion. He is building a large boat house at his home on Lake Winnebago to accommodate the new craft.

## L. B. McDermott Resigns

APPLETON, Wis., June 3, 1929.—L. B. McDermott has resigned his position with the Badger Paper Mills Company, Peshtigo, Wis., but has not announced his future plans. He was office manager for several years for the Peshtigo Paper Company, the predecessor of the present company. Robert W. Pepper, timekeeper for the Badger Paper Mills Company, has resigned and will take a position with the Rhinelander Paper Company, Rhinelander, Wis.

# WISDOM

## THE DICTIONARY DEFINES THE WORD WISDOM AS "SOUND JUDGMENT"



**It is *not* always sound judgment to purchase the cheapest priced machinery. "Your paper is made in your Beaters," and you cannot afford to rely on poor Beaters to make good paper.**

**Wise paper-makers use good Beaters. The Dilts New Type are good Beaters and represent wisdom and sound judgment in beating engine development.**

---

***"There is scarcely anything in this world that some man cannot make a little worse and sell a little cheaper and the buyers who consider price only, are this man's lawful prey."***

***Attributed to Ruskin.***

**Dilts**

**MACHINE WORKS, Inc. FULTON, N.Y.**

EXPORT OFFICE - 15 PARK ROW - NEW YORK CITY

**"Your Paper Is Made In Your Beaters"**

# New York Trade Jottings

Irving S. Paull, president of the Institute of Carpet Manufacturers, was the speaker at the regular weekly luncheon and meeting of the New York Division of the Salesmen's Association of the Paper Industry. He gave an interesting and instructive talk on "Functional Pricing," which was greatly enjoyed by an excellent attendance of members.

* * *

The Joint Committee on Approved Pulp Testing Chemists for the Paper Industry of the United States, with headquarters at 18 East 41st street, New York, announces that D. S. Davis, of the Container Corporation of America, Manayunk, Philadelphia, Pa., has been accepted by the committee as an approved mill pulp testing chemist and is listed as such, effective May 27, 1929.

* * *

Independent Paper Box Manufacturers' Association of Greater New York is charged with being a business monopoly and price fixing combine by Attorney General Hamilton Ward in an action started, under the Donnelly Act, to dissolve the organization. Hearings were scheduled to begin yesterday, June 5, before Referee Elmer E. Studley, named by Supreme Court Justice Faber.

* * *

D. A. Crocker, secretary of the Gummed Industries Association, with headquarters at 18 East 41st street, New York, announces that the regular summer meeting of the association will be held at the Hotel Clifton, Niagara Falls, Ont. Suggested improvements of the statistical service of the association, cost accounting methods, and standardization, will be among the subjects discussed at this meeting.

* * *

The Tension Envelope Company, of Brooklyn, N. Y., makes the following announcement: "The tendency to order in small quantities has reached the point where it has materially increased our cost, due to the expense of handling, delivering, billing, etc., and we find we can no longer continue this kind of business gratis. Therefore, on and after June 1, there will be a service charge of 25 cents in addition to the price of goods on all requested deliveries, the bill for which is less than $5.00.

* * *

W. B. Thom, president of the United Chemicals, Inc., and Westvaco Chlorine Products Corporation has issued a statement of operations for both companies, showing net earnings of United Chemicals for the first three months of 1929 of $176,223, after all charges. Preferred amounted to $90,000. Cash on hand and call loans aggregated $3,472,000. Westvaco Chlorine earned $302,000 in the initial 1929 quarter after all charges against $128,000 in the same 1928 period. Preferred dividend requirements amounted to $40,000. Cash on hand and call loans totaled $1,541,000.

* * *

Nathan I. Dewine has purchased from the Union Bag and Paper Company their three-story factory building situated at the corner of Third street and Van Alst Avenue, Long Island City. The property has a total floor area of approximately 55,000 square feet, consisting of the main building, 80x200, and a one-story additional building 75x100. There is a permanent railroad siding on the Long Island Railroad leading to the property. The Union Bag and Paper Company remains in the premises under a lease for twenty-one years, with one renewal period. The property was held at $350,000.

* * *

The Roessler & Hasslacher Chemical Company of 10 East 40th street, New York, held its annual outing last Saturday, May 25, at Glen Cove, Long Island. There were approximately two-hundred guests. The managers of several branch offices in the East were present. After a spirited ball game, a show was staged by the men and women employees of the company. In the evening a chicken dinner was served. Mr. Milton Kutz, vice-president, manager of sales, presented platinum watches to some employees of the company who had been with the organization for 25 years or more and who had not already received a gift in recognition of their services. The following employees of the company were so honored. Miss S. Dinant, Miss G. Warren, Miss J. Paulson, Miss L. Chorlton, William Mohr, J. V. Muller, Albert Reusch, W. P. Stoll, A. C. Klahre, F. A. Deisler, J. A. Brimlow, Carl Dittmar and John Baumgartner.

## Visit Rhinelander Paper Mill

RHINELANDER, WIS., June 3, 1929.—Top-notch efficiency in industry, as developed in the plant of the Rhinelander Paper company, was on display recently for the benefit of members of the Rhinelander Rotary club, who were guests of officers, directors and executives of the paper mill.

The unique feature of the entertainment was the serving of a noon luncheon in the mill's new power plant. The luncheon was served under the supervision of G. H. Suhs, engineer, and the chefs were "Monsewers" L. Mudgette, R. Jensen and Gus Johnson. The serving was by a group of girl employees of the mill.

Seated at a long table at one end of the huge boilers, in which power was being generated for the paper mill operations, the guests enjoyed the novelty of the occasion thoroughly. The power plant is immaculate throughout, all coal being handled by conveyors.

Folke Becker, manager of the paper company, in a short talk told of the tremendous expansion program which has been under way in the paper company's mill during the last three years. Competition in the paper making industry, he said, meant that no producing company could survive unless it kept operations keyed to high pitch.

The first development in the paper company's expansion was the construction in 1926 of a new bleaching plant. This was followed by the complete rebuilding of paper making machines and the installation of one new machine. Last summer the new power plant was built, with two new boilers replacing the old battery of eight boilers.

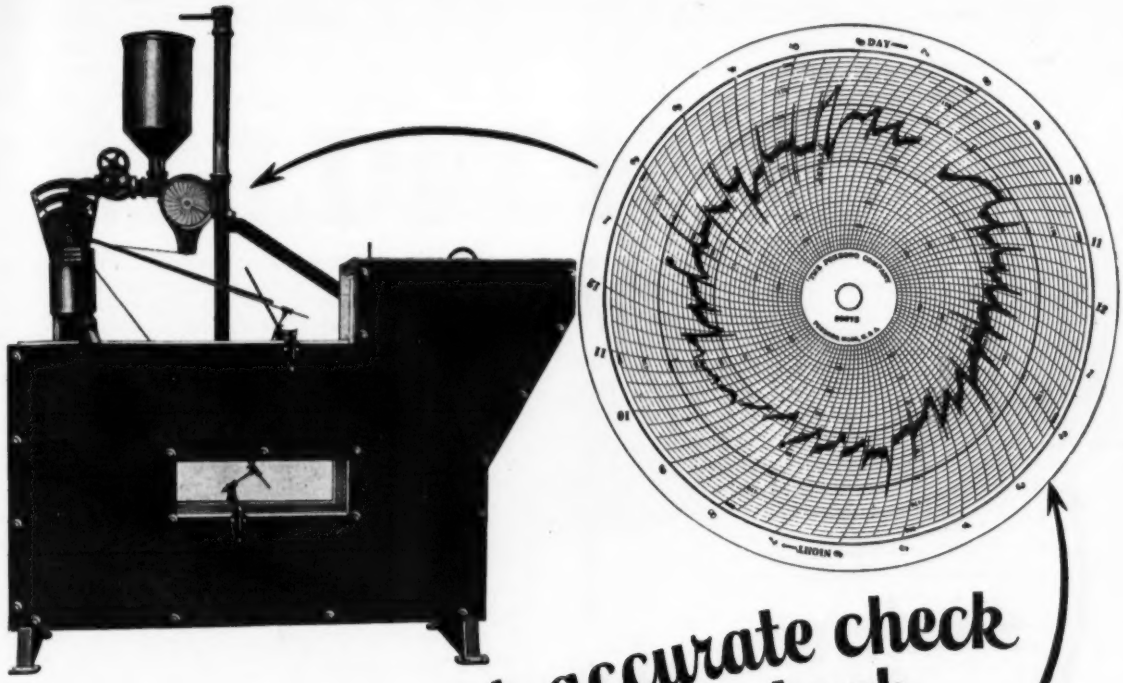
Mr. Becker called on Mr. Suhs to explain in further detail the power plant reconstruction. Mr. Suhs explained that variation in water levels made hydroelectric power supplies too variable for exclusive use and that power generated by steam continued to be the backbone of mill operations. Particularly interesting in his remarks were his comments on the multiplicity of uses to which identical steam is put.

Cost accounting methods, Mr. Suhs said, have necessitated accurate check on the use of which every bit of generated energy is put. He explained that certain quantities of fuel must produce definite amounts of energy and that figures are kept to insure maintenance of generation schedules.

Following Mr. Suhs' remarks guests divided into small groups and, under the guidance of company executives, inspected the entire paper mill operations.

## Open Paper Research Laboratory

Last year the Rag Content Paper Manufacturers sent two research Associates to the Bureau of Standards to work on some fundamental research problems connected with the permanence of high grade papers. As an outgrowth of that work, these manufacturers have now opened an up-to-date, well equipped paper research laboratory at 44 Vernon street, Springfield, Mass. This laboratory will specialize in the study of fundamental problems relating to the industry, giving particular attention to the new developments in the chemistry of cellulose and the extension of chemical control in the manufacture of high grade papers for permanent records. The laboratory is in charge of Dr. Jessie E. Minor.



# A constant, accurate check on your stock consistency

IN addition to maintaining *automatic control* — this DeZurik Regulator keeps a *constant accurate check* on the consistency of your stock.

All the stock must pass through this Regulator. Water is automatically added to stock of excessive density.

By merely referring to the Bristol chart, as shown above, a complete history of the day's run can be quickly and accurately ascertained.

If the stock density varies beyond the limits on control for which the regulator is set, it is clearly shown on the chart.

Thus, this regulator is of indispensable value in helping the mill operators maintain uniform control.

Let us tell you more about its many other important advantages in our special Regulator Bulletin. Write for it.

**VALLEY IRON WORKS CO.**

*Machinery for Paper and Pulp Mills*

**APPLETON WISCONSIN**

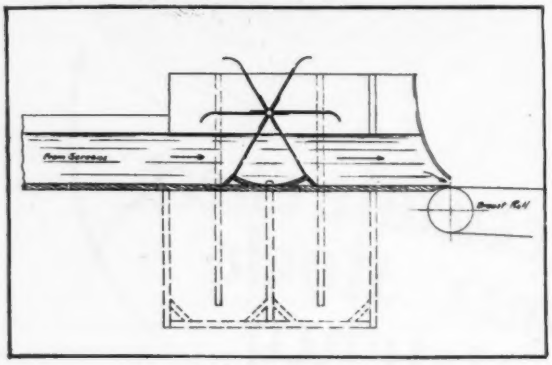
*New York Office: 350 Madison Avenue*
*Western Manufacturing & Sales Division: Smith & Valley Iron Works Co. Portland, Oregon*

## Head Box For Fourdrinier Machines

A recent issue of the "Super Calender" sent out by Pusey and Jones Co. gave a very interesting history of the development of the head box for fourdrinier machines, accompanied by drawings from their files showing changes in design from the earliest type to the more elaborately baffled designs of the present day.

The function of the head box is to smooth out the eddies and cross currents set up by the stock as it issues from the several screens and allow the entire mass to approach the slice with a uniform velocity and free from currents which would otherwise occur and cause shifting heavy and light streaks in the sheet.

In the early days when machines were narrow and speeds were low, it was comparatively simple to secure an even distribution across the wire. As machines became wider and speeds increased, the volume of stock to be distributed became greater, and larger and larger head boxes were built with more baffles and even then it was frequently necessary to resort to bricks, strips of iron, miniature picket fences, etc., in an effort to smooth out the eddies



TRIMBEY HEAD BOX ELIMINATOR

and cross currents and secure a uniform distribution across the wire as the stock issued from beneath the slice.

With the increased size of the head box and with more baffles there is more surface and more dead corners where slime will accumulate and eventually will become loosened and cause breaks.

The accompanying illustration shows a recent development which not only reduces the area where slime can gather and eliminates all dead corners but also effectively removes all cross currents and eddies. It consists of a light but rigid paddle wheel having six arms or blades extending across the entire width of the pond and mounted in open lignum vitae bearings.

In a new installation the screens can be located somewhat closer to the breast roll, but in adapting this eliminator to a paper machine now in use it is necessary only to remove the vertical baffles extending downward from the top of the head box and floor over the space between the screens and apron, thus giving an open spout in place of the winding passage over and around the present baffles. On this false bottom is built a cylindrical segment using a radius equal to that of the paddle wheel itself and a chord equal to the distance between the tips of two adjacent blades. In this way there will always be one blade in position to intercept the uneven currents and dissipate their energy so that as this volume of stock moves forward it is entirely free from disturbance.

The six blades are mounted on light bronze spiders attached to a central shaft and carry flexible rubber strips along their outer edge, as shown by the illustration; these strips will bend of their own weight so that they will leave and enter the liquid at nearly right angles to the surface and there will be no disturbance whatever.

Since this eliminator makes only from three to five revolutions per minute and moves very freely, no outside power is required. It is carried along by the current in the pond and in this way there is no apparent difference in level on the two sides of the eliminator and absolutely no rise and fall in the level at the slice.

The use of this device not only increases production by greatly reducing the number of breaks caused by lumps and slime but also improves the quality due to the greater uniformity across the sheet and at the same time improves the general running condition of the paper machine.

It is manufactured by the Trimbey Machine Works of Glens Falls, N. Y., under the name of "The Trimbey Head Box Eliminator." Patent applications are pending in the United States and Canada.

## To Nominate Brotherhood Officers in July

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., June 1, 1929.—Announcement was made this week at the headquarters of the International Brotherhood of Papermakers that candidates for the various offices will be nominated during the month of July and indications are that there will be considerable opposition in view of the fact that a rival ticket will be in the field. William R. Smith, president of the organization, will again be nominated to head the main ticket. Indications now point to one of the most spirited elections in the history of the International organization. While locals are permitted to officials will seek re-election. This includes the six vice-presidate to oppose President Smith has been virtually settled but his identity will not be disclosed for several weeks. Just how far down the list the opposition to the present officials will extend is not known but it is generally conceded that all of the present officials will seek re-election. This includes the six vice-presidents, Frank P. Barry, of Albany, John W. Bailey, of Holyoke, Joseph Addy, of Troy, A. F. McLeod, of Three Rivers, George Schneider, of Appleton, Wis., and Arthur D'Aoust, of Hull, Quebec.

Arthur Huggins, of Holyoke, the present secretary of the organization, will be a candidate for re-election as will also Archie Hook, of Chicago, the treasurer, and David Larner, of Tonawanda, the auditor. There will also be elected two delegates to the A. F. of L. Convention and one delegate to the Canadian Trades Congress. There are still several conferences scheduled between the representatives of the union and the paper manufacturers in connection with the signing of new agreements. The list includes Unity Paper Company of Potsdam and the St. Regis Paper Company of Watertown. The others are located in Canada and Maine. Negotiations have been practically completed with a paper company at Sartell, Minn., for the production of union watermarked paper. The present output at Potsdam, N. Y., and Taylorville, Ill., is not sufficient to meet the demands and the paper does not include bond or ledger brands which the union plans to market in the near future.

Following a conference which was remarkable for its brevity officials of Finch, Pruyn & Co. of Glens Falls and representatives of several labor unions this week signed an agreement which provides that working conditions and wage rates now in effect in the paper mills in this city shall continue for another year. The conference was held in the offices of the company. The contract was signed by officials of the International Brotherhood of Papermakers, International Brotherhood of Pulp, Sulphite and Paper Mill Workers, International Brotherhood of Firemen and Oilers, International Association of Machinists, United Brotherhood of Carpenters and Joiners of America and International Brotherhood of Electrical Workers.

## Old National Mill Property Sold

BALLSTON SPA, N. Y., June 1, 1929.—The old National Mill Property, north of this city, has been sold to the Adirondack Paper Company, which is controlled by the American Industrial Holding Corporation, of Bath, Me. For a long period the plant was one of the best mills in this vicinity running steadily from year to year besides employing a large number of local residents. It is understood that plans of the new owners call for the refitting of the plant with new machinery following which it will again take its place as one of the leading paper mills in this section.

# WALDRON Paper Rolls

## How Do You Figure Your Roll Costs?

**UTILIZATION COST**

is determined by comparing the initial cost of a roll to the actual number of operating hours of service or the yardage run secured from the roll.

Keeping such a record prevents excessive roll costs.

You cannot compare rolls without careful comparison of the class of work that is required from the rolls. Initial cost might prove a roll the most economical to buy for one class of embossing and the most expensive to buy for work of a different character.

Different classes of engraving require varying densities and different fills in paper rolls. Quality of materials to be embossed and plant conditions determine the measure of service that can be secured from a roll. And unless a roll gives full measure of service under prevailing conditions, it must prove costly—at any price.

Waldron Rolls are correctly built for the individual class of work at hand. Varying factors in operation are anticipated in their design and construction. As a result they give better service, longer service and consistently show low utilization cost.

## Write For Your Copy

*We have prepared complete printed instructions on the running in of paper rolls, that will help you avoid difficulties. A copy will be gladly sent you on request.*

**JOHN WALDRON CORPORATION**

*MAIN OFFICE AND WORKS NEW BRUNSWICK, N. J.*

NEW YORK
122 East 42nd St.

CHICAGO
208 West Washington St.

PORTLAND, ORE.
519 American Bank Bldg.

# Power Plant Section

## Reducing Power Costs Through Unit Treatment

Conducted by Reginald Trautschold, Consulting Engineer

# Modernizing the Mill and Power Plant

### Suitable Packing Service

No mill can be operated really economically and no power plant can function efficiently unless the provisions made in the matter of packing services are relatively satisfactory. Viewed from almost any angle, the question of suitable packing service is a major consideration in respect to expenditures. This does not mean that the actual costs of packings, gaskets, etc. need constitute any very great expense item, but rather that the direct and indirect expenses which can be curtailed to a very considerable extent by satisfactory packing service are truly staggering in the aggregate. It means, furthermore, that with relatively few exceptions, the pulp and paper mills of the country could very profitably expend a good deal more than at present for suitable packings and gaskets, the dividends of suitable packing service being so pronounced.

The best and most economical packing service is that secured with that packing which will seal the longest, require the least attention and imposes the minimum frictional load. The actual initial cost of the packing is of comparatively little concern, for the biggest item in packing costs, especially in an industry which can so ill afford any interruption whatever to productive activity as that of pulp and paper making, is the time lost while packings are replaced or adjusted. Quite similar weight is the cost of the imposed frictional load, which takes its toll in power consumption and equipment deterioration. Packing durability and the avoidance of all preventable imposed frictional load are then the outstanding requirements for suitable packing service and it is the success with which a packing functions in these two respects which establishes its real value.

It is not the intention to discuss here the suitabilities of the many varieties of packings which are available, eminently satisfactory as most of them are under certain conditions of service, but rather to present a collection of notes bearing in most part upon how the essentials of durability and control of frictional load are attained. While the characteristics of various classes of packings in respect to these essentials will be mentioned, it will be rather as an exposition of principles than as recommendations or endorsements.

#### Lubrication of Paramount Importance

From both the aspects of packing durability and the ability of the packing to combat friction, suitable lubrication is of prime importance. The packing about a shaft or rod, as in the case of a bearing, should be softer than the moving member, the journal somewhat harder than the bearing against which it revolves, so the protection of a suitable film of lubricant, or its equivalent, is essential. Otherwise, excessive friction will develop and the packing will be burned out just as in the case of a bearing. The surface of the shaft or rod will also be destroyed and the seal of the packing broken.

The lubricant may be graphite or some heavy compound with which the packing material is impregnated, as is usually the case where fibrous packing is employed, or it may be a quality oil, as in the case of metallic packings of the so-called floating type. If the lubricant does not actually create the all important seal in packing service, it at least is highly instrumental in maintaining the seal. The lubricant must also be of such character and so carried as to withstand the washing out action of the steam, water or chemical solutions with which it may come in contact.

Its resistance to the cutting action of caustic soda, bleach and other corrosive liquids, acid and alkaline, is extremely important, for once the lubricating ability of the packing is lost the packing service collapses. Tightening up on the stuffing box gland can only alleviate the situation temporarily at best, for the packing hardens, scores the rod or shaft and consumes power. The evils of friction are intensified and whatever quality of durability the packing may have possessed is in large measure sacrificed. In short, the lubricant of the packing should not only counteract the chemical destruction but keep the rotating shaft or moving rod so effectively lubricated as practically to do away with rod friction.

#### Metallic Packings, Floating Type

With the advent of high steam pressures and a more general appreciation of the importance of packing durability, attention has been directed very naturally to the use of metallic packings, both of the floating and flexible types. Obviously, a solid packing possesses greater wear resisting properties and will more effectively seal in engine, compressor and reciprocating pump packing services than a fibrous packing lacking equired density to prevent leakage under present day practical pressures, provided, of course, that intimate contact can be maintained between the rigid packing rings and the moving rod. So far as durability of packing is concerned, metallic packing of the floating type is superior doubtless to any other form of packing. In fact, in many instances it has given suitable packing service with little or no attention for periods of five to twenty, even over thirty years.

This form of packing is also distinctively effective in the curtailment of the friction losses which cannot be entirely eliminated. For instance, while driving a 3-inch rod, packed with fibrous packing, at 600 feet per minute, steam pressure at 125 pounds, will consume at the rate of about 5 horsepower, the power consumption if the rod is packed with metallic packing is somewhat less than ¼ horsepower. In a paper mill, valuing power at 1 cent per horsepower-hour, the power item of the packing cost under such circumstances would favor the metallic packing by $340.00 or $350.00 a year. Such saving would amply cover the initial cost of the metallic packing ten to fifteen times during the twelve months.

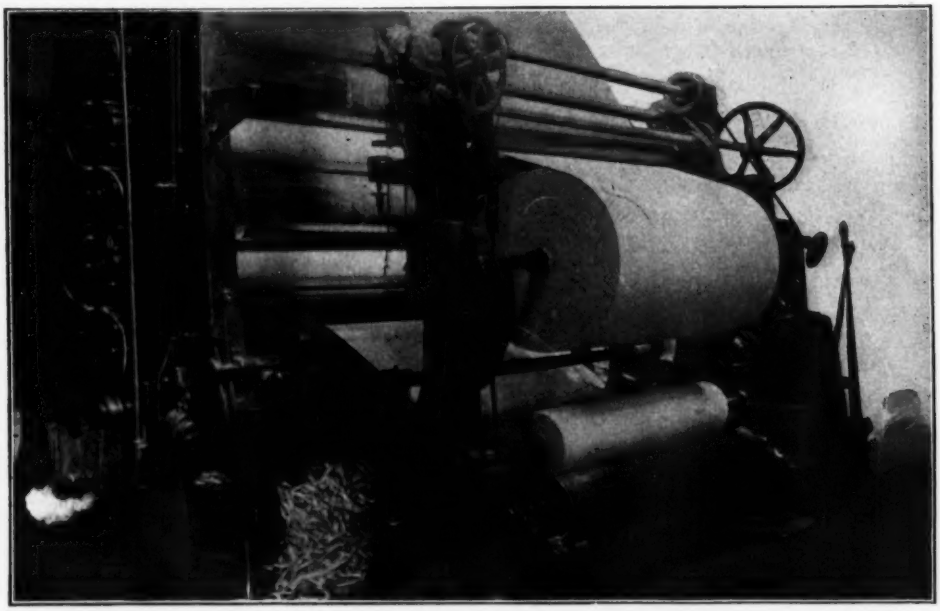
In this form of packing, the packing rings are made in segments, usually three, which are held in position on the moving rod by a circumscribing spring with just enough pressure to insure intimate contact between rod and packing rings under working conditions. These rings, mounted in pairs, fit snugly about the rod, the segmental construction making due provision for any ring wear and permitting the rings to be mounted upon the rod, or shaft, without dismantling the equipment unit. The rings are carried in cast iron packing cases which are proportioned so as to fit into the stuffing boxes of the packed rod.

The general construction of an approved form of floating type metallic packing is clearly shown in the two accompanying line cuts, one depicting a packing with a split packing case, readily

# "M & W" Drum Winders for Super-Calenders

## PERMITS FASTER SPEED FOR CALENDERING

*Shipping Rolls are made direct from Supers without rewinding the Rolls*



**Two-Drum Type Winder (Photograph taken in one of the mills of the Kimberly-Clark Co.)**

## Built with Two or Four-Drums
## Makes use of wide stacks desirable

Rolls trimmed direct from Super-Calenders —(retrimming unnecessary).

Rolls readily changed from winding drums to unwinding shaft by means of self-contained electric motor lift.

Straight, hard rolls are made without wrinkles . . . no soft rolls or telescoped ends.

Winders equipped with automatic tension regulation to eliminate paper breaking between calender and winder . . . and to regulate the hardness of rolls to be wound.

For wide stacks of Calenders, the "M & W" Four-Drum Super-Calender Winder reduces the waste of finished product to a minimum.

All features of the well-known "M & W" Four-Drum Winder used for making shipping rolls direct on paper machine are retained—such as independent winding of rolls on independent shafts, etc.

**"M & W" Four-Drum Super-Calender Winders equipped with Removable Top and Bottom Slitters. "M & W" Brass Collapsible Winding Shafts are the latest improvement for High Grade Mills.**

**Further Particulars Upon Request**

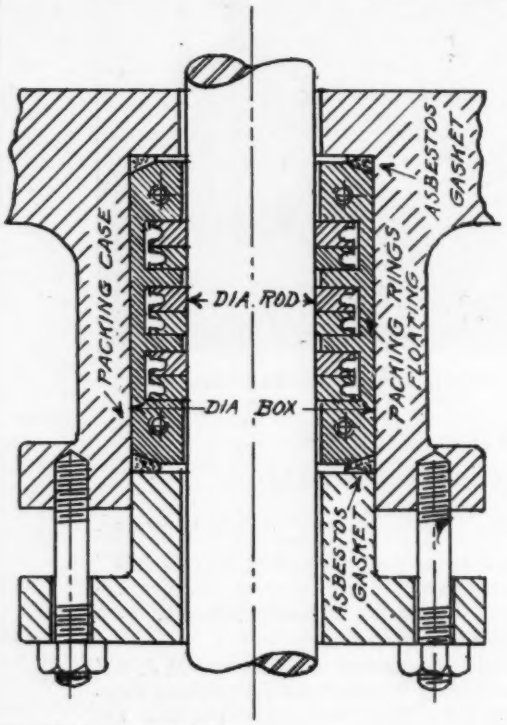
THE MOORE & WHITE CO.
PHILADELPHIA, PA.
N. PHILA. STA. PENNA. R.R.
PAPER MILL MACHINERY

**Patents Pending for Recent Improvements to "M & W" Drum Winders**

mountable without dismantling the shaft, and the other a packing with an annular packing case. With the latter construction, the packing case has to be slipped over the end of the rod and slid into position. Where this is feasible, the annular packing case construction is the more desirable, avoiding the need of bolting the packing case together, being somewhat more compact and less liable to possible disarrangement.

The multiplicity of packing rings, which individually adjust themselves to intimate rod contact, insures the tightness of the packing and seal about the rod with only a quite moderate binding ring pressure and any leakage around the packing case is prevented by the gaskets at the bottom of the stuffing box and between the outer end of the packing case and the confining stuffing box gland. The packing case being rigid, whether of the split or annular case construction, the packing rings are not subjected to the compression strain which would interefere with their self-adjustment. In fact, the only gland pressure required is the moderate one needed to hold the packing case in position and to compress the sealing gaskets sufficiently to prevent leakage around the packing case.

Lubrication in the case of this form of packing is quite vital, particularly when high pressures and high temperatures are encountered, and a high quality oil of suitable consistency should be introduced between the first and second pairs of packing rings. To emphasize this point, it might be mentioned that this form of floating metallic packing is suitable for any practical working pressure, no matter how high, and for temperature conditions up to 1,000 degrees Fahrenheit.



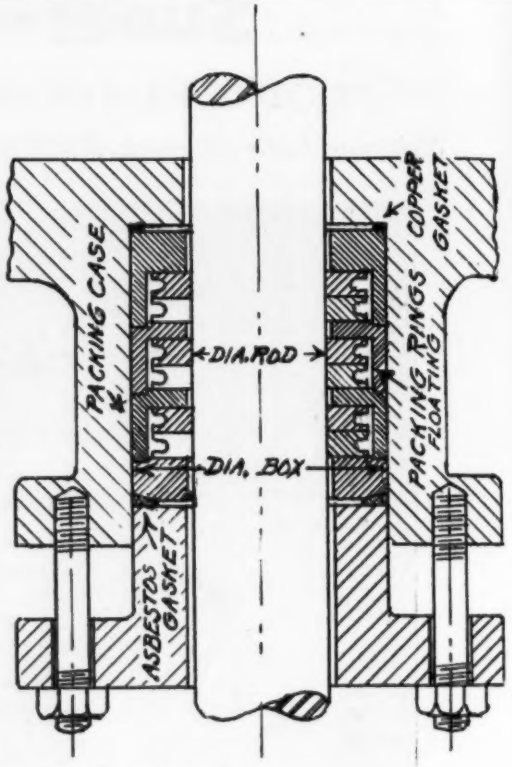

*Courtesy: The France Packing Co.*

FIG. 1

**Stuffing Box Fitted with Metallic Packing Rings, Floating Type. Inside Annular Case Construction.**

There are some extraneous conditions, of course which may interfere with the generally high efficiency of this class of packing, but such conditions should not be allowed to exist in a mill exercising reasonable care over its equipment. The packing is not suitable for rods which are at all scored, neither is any other form packing really for that matter, where the rod rubs on the gland, on the hole in the cylinder head or where the engine is not properly lubricated. If these faults are absent, as they should be, the essentials of packing durability and control of frictional load are well realized by metallic packing of the floating type. In confirmation of this, excerpts from reports made by a couple of prominent paper mills may well be cited.

The Fibreboard Products, Inc., Los Angeles, Cal., states; "Our Chief Engineer advises the packing is still in this engine and working satisfactorily after thirteen years service." The West Virginia Pulp & Paper Company reports; "Have been using this metallic packing on our Corliss engines for a great many years and find it very satisfactory."




*Courtesy: The France Packing Co.*

FIG. 2

**Stuffing Box Fitted with Metallic Packing Rings, Floating Type. Inside Split Case Construction.**

### Flexible Metallic Packing

Another class of metallic packing which has met with considerable favor in paper mill services and well meets the essential requirements of packing durability and control of frictional load is that which may be conveniently designated as flexible metallic packing. The packing is composed of different metals or combinations of metals, each selected to furnish satisfactory packing service under more or less prescribed conditions and may be obtained in the form of bars, coils and die moulded rings to fit almost any type and form of stuffing box. Sheets of the suitable metal foil are thoroughly lubricated, crinkled and formed into bars or coils with rectangular, round, square and other cross-sections of various dimensions, providing packing flexibility and plasticity as well as a constant source of essential lubrication.

The packing in the various forms and of the particular grade best suited for the service encountered is built-up into sets, or assemblies, in the recess of the stuffing box. If the form is a moulded packing ring, the procedure is to split the first ring around the rod and seat it firmly in the bottom of the box. Frequently this throat ring is a copper clad member designated as a "junc" ring and it should always be the first ring applied. The requisite number of packing rings to fill the stuffing box comfort-

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Bird & Son, Inc., at East Walpole, Mass., was established in 1795. Few industries indeed can point to an organiaztion having such an enviable record for continuous service.

The Nation-wide use, and unexcelled reputation of BIRD Special Papers, Wall Board, Insulating, Solid Fibre and Corrugated products, made here, is a well merited recognition of the experience gained from more than a Century of operation

Mid-West Hi-Speed Beaters are used in the production of Bird Special Papers.

For exacting standards of quality, Mid-West Hi-Speed Beaters can be depended upon to give the best results at lowest cost per ton.

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May we submit estimates on the installation of Mid-West Hi-Speed Beaters in your Plant?

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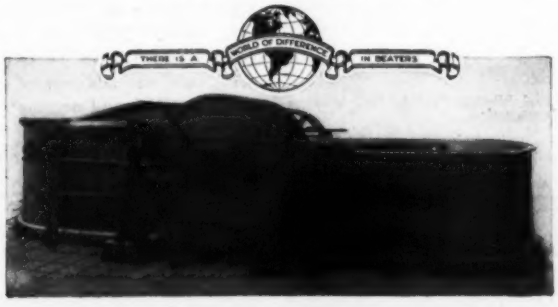
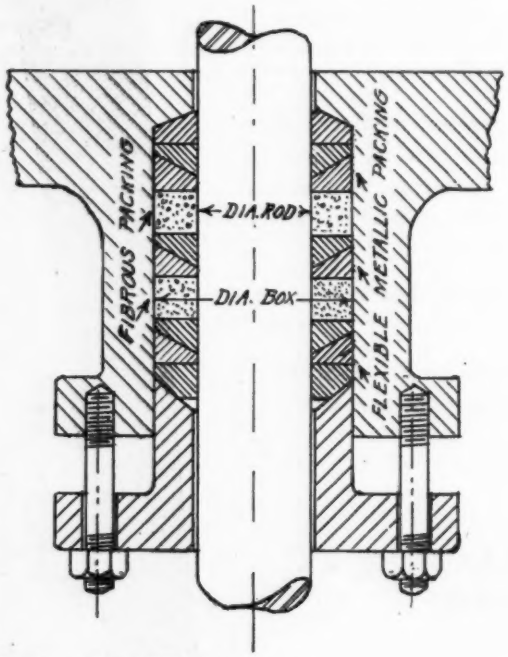



MID-WEST
PAPER MILL MACHINERY

ably are then slipped over the road, each being firmly pressed into place. If a "swab" ring is employed, it should be the last applied, serving as a seal between the packing set and the stuffing box gland. With the stuffing box filled, the gland is inserted and taken up sufficiently to compress the packing just enough to insure a tight seal. After the packing has been in service some little time, it may be possible to insert an additional ring. In fact, an extra ring may be added from time to time over quite an extended period and this should always be done whenever the stuffing box gland has been taken up as far as possible. While it is essential that the gland be taken up whenever additional pressure is needed for maintaining the seal, excessive gland pressure should be carefully guarded against, the proper adjustment being only just enough to attain the seal.

If the packing is in the form of spiral coils or straps, the packing should be tightly wound about the rod once only and cut into individual packing rings with well fitting diagonal joints. The requisit number of packing rings to fill the stuffing box are formed in this manner and a packing set similar to one built-up of moulded packing rings results.

With flexible metallic packing rings of all kinds of cross section procurable all manners of packing sets may be formed and the metallic packing rings may also be combined with rings of fibrous packing to form sets highly efficient under certain conditions of service. For example, in cases where the rod may not be in the best of conditions a packing set made up of pairs of metallic packing rings contacting on conical surfaces and separated by fibrous packing rings inserted between alternate pairs of




*Courtesy: Duraметallic Corp.*

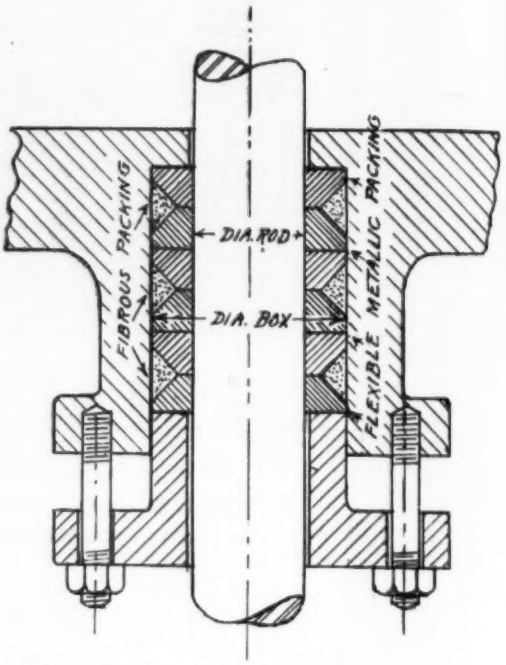
FIG. 3

**Stuffing Box Fitted with Flexible Metallic and Fibrous Packing Set. Diagonal "Beveled" Ring Construction.**

metallic packing rings is held to give longer and more satisfactory packing service than can be secured with either fibrous or flexible metallic packing alone.

Another combination packing set assemblage which is claimed to possess that advantage of requiring somewhat less gland pressure for producing a satisfactory seal than a metallic packing set made up wholly of rings of square or rectangular cross-section, utilizes flexible metallic rings with one outer edge bevelled off, assembled in pairs, and fibrous or other elastic rings of conforming triangular cross-section for filling up the stuffing box. The combination, which is illustrated, provides marked packing resiliency with the long wearing and anti-frictional qualities of metallic packing.

Many other forms of flexible metallic packing sets and assemblies with other classes of packing materials are now easily procurable which are conveniently arranged for quick insertion




*Courtesy: Duraметallic Corp.*

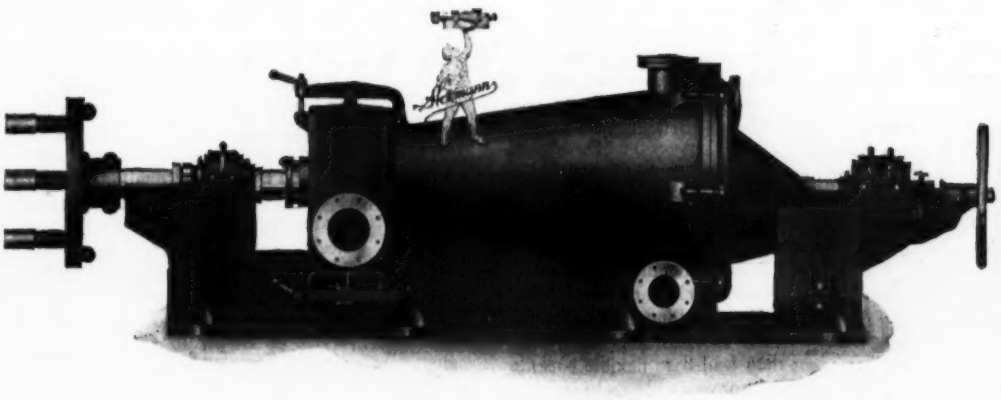
FIG. 4

**Stuffing Box Assembly of Flexible Metallic Packing Combined with Triangular Fibrous Packing Ring Filling.**

in stuffing boxes of standard proportions, a valuable development for it substantially reduces the time required to pack a box, but the foregoing should suffice as an indication of what is available and what can be done in the line of flexible metallic packings. The results commonly secured with the packing, however, can best be shown by the citation of a few specific applications, preferably on paper mill equipment proper.

In connection with the packing of the large, multi-cylinder, vertical plunger pumps with brass barrels frequently employed for handling stuff, for instance, this class of packing has quite generally demonstrated its ability to give three or four years of service on a single packing, adding two or three additional packing rings at long intervals. A case in point is that of a large Chartel pump at the Western Board & Paper Company, Kalamazoo, Mich. This pump was first packed with flexible metallic packing some seven years ago and ran for two and a half years with only the addition of two rings to the original application. It was then found necessary to remove the packing because of an accumulation of pins, staples and abrasive materials in the stuffing box. A second packing with flexible metallic packing gave similar carefree service for another two and a half years before it was necessary to remove it.

For smaller pumps handling stuff, such as are used for handling book paper stock, considerably longer periods of service are reported by a number of prominent paper mills. This is also true in the case of most types of suction pumps, the packing of which with flexible metallic packing shoud be counted upon to provide suitable packing service for from two to four years, depending upon



# *The Hercules Jordan Is the Choice or Ultimate Refinement*

**BECAUSE its perfectly centered plug insures delivery of clean, uniform pulp. Over-size traps gather up all foreign substances, preventing their being carried forward with the refining process. Micrometer adjustments and spacious inspection openings are factors that make for accuracy, not usually attained in Jordan practice.**

### *Roller Bearings For Longer Life*

**Timken-Tapered Roller Bearings give an undetermined number of years of service, holding the plug in an accurately centered position with positive alignment. The Hercules Jordan Plug cannot sag from use.**

### *Quick Change Features Involve Less Labor*

**Every part of the Hercules Jordan is quickly accessible. Both shell fillings and plug liners can be changed in but a fraction of the time usually required. Timken-Tapered Roller Bearings do not have to be disassembled from the shaft when a change is necessary.**

### *For Manufacturers Who Consider Efficiency First*

**A great advantage of the Hercules Jordan is its adaptability for the kind and character of stock required. It is easier starting under load, and provides the utmost in efficiency with a smaller consumption of power. Considered from every angle, paper manufacturers have discovered a super refiner in the Hercules Jordan.**

### *Exclusive Patented Features*

**Shell Fillings and plug Liners possess exclusive, advantageous patented features which result in longer life, and perfect fitting without the necessity of "grinding in."**

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Canada
Watrous, Ltd.
Brantford, Ontario

Pacific States
A. H. Cox & Co.
Seattle, Washington

## THE HERMANN MANUFACTURING CO.

**LANCASTER, OHIO**

the attention the packing receives and the condition of the equipment when the packing is first applied.

For service with centrifugal pumps, this packing has also proved eminently satisfactory, if the pump is well balanced on two outboard bearings and has two stuffing boxes, particularly if the pump is directly connected rather than belt driven. On the other hand, some trouble has been experienced with the packing when applied to pumps having an overhung impeller. The whip of the shaft in such cases, a serious fault in itself, tends to open up the packing and break the seal. This is particularly noticeable when hot stock is being handled.

Chemical conditions also impose complications, making the selection of the suitable flexible metallic packing base of extreme importance. For handling bleach and alum liquors, lead base packing is probably the best. The metallic elements well resist the action of the liquids, making such flexible metalic packing very suitable for packing miscellaneous pumps, including stock pumps, Jordans,, agitators, line valvs, etc. For handling lime and soda ash liquors, a copper jacketed, flexible, asbestos, superheat packing, considerably lighter in weight than lead base flexible packing, which is very heavy, is claimed to be more suitable and is recommended for handling such liquids by packing producers.

### Fibrous Packing

For the packing of most horizontal revolving shafts, those of centrifugal pumps, etc., packings of the fibrous class prove quite satisfactory when they really conform to the escsentials entailed for rendering suitable packing service, i.e., possess durability and effectively control the imposed frictional load. In order to discharge these two basic requirements for rendering economical and satisfactory packing service, proper packing lubrication is the outstanding need.

It is no exaggeration to state that literally each individual strand of fibrous packing should carry or be impregnated with a suitable lubricant. The function of the lubricant is to counteract chemical destruction as well as to keep the moving equipment member suitably lubricated. The lubricant must resist the washing-out tendencies of solutions of caustic soda and other chemicals, else the packing will harden and cut the shaft, destroy the seal, aggravate equipment deterioration, etc. It must also combat the destructive rod friction.

To render these two essential services, the required lubricant qualifications should be inherent properties of the packing and these should be protected and conserved to the utmost, in order that the packing may render long and economical service. The very common mistake of subjecting the packing to excessive gland pressure should be carefully guarded against. The seal of a packing is effected as a function of the lubricant and practice which tends to force the lubricant out from the bearing surface of the packing simply builds up rod friction, dries out the packing, expelling still further lubricant, and subjects the packing material which served as a lubricant carrier to destructive frictional heat. True, a certain gland pressure is necessary in order to hold the lubricant impregnated packing in place and to create the necessary seal between the packing and the moving rod, but once the packing seal has been effected any additional gland pressure is a destructive factor, destroying the durability of the packing and imposing a quite unnecessary burden of excessive rod friction.

Very much the same precautions should be exercised when using all other classes of packings employed for sealing moving rods and rotating shafts, when making use of wick and rope packings for valves and fittings and for all services in which imposed or developed frictions exact a toll and waste power. In the case of discs, pump valves, gaskets and washers, the function of the packing is simply that of creating and maintaining a seal and under such circumstances applied pressure is, of course, a productive rather than destructive factor. These lines of packing services, however, were discussed in considerable detail in these columns in the issue for November 22, 1928, and it would appear unnecessary to go over the same ground at the present time.

The notes presented in respect to various classes of rod and shaft packings have been advanced simply to focus attention upon the two outstanding essentials for securing suitable packing service at low total cost. Economical packing service entails; 1st, packing durability; and 2nd., packing ability to combat rod friction.

## P. T. Coolidge Opens Office at Toronto

P. T. Coolidge has announced the opening of an office for timber estimating and surveying at 1261 Bay street, Toronto. Mr. Coolidge is a graduate of the Yale School of Forestry. Since 1916 he has conducted a timber estimating office at Bangor, Maine, from which he has cruised, mapped, and prepared logging plans for many large areas of timber in the United States and Canada. William C. Wheeler, also a graduate forester, has been associated with Mr. Coolidge during the last nine years. Besides his Bangor office, Mr. Coolidge has an office in Norfolk from which work in the South is handled. His Toronto office will enable him to give more direct service to clients in Ontario and the Great Lakes region.

## American Writing To Reopen Idle Mill

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., June 4, 1929.—President Sidney L. Willson in a statement issued last week looked forward to the reopening of one of the idle mills of the company if business continues to improve. During the summer beginning this month business generally falls off a little so the chances are that the reopening will be delayed until fall. The company is now operating twelve mills, President Willson said, and on a full time basis. Nothing definite has been arranged as yet but the continuance of increase in orders will automatically bring it about. Much money has been spent in bringing the plants up to date and their physical condition is now pronounced to be excellent.

## Herkimer Fibre Co. Suffers Fire Loss

[FROM OUR REGULAR CORRESPONDENT]

HERKIMER, N. Y., June 1, 1929.—Loss of several thousand dollars was suffered by the Herkimer Fibre Company when a box car containing products of the firm was destroyed by fire here. The blaze, of unknown origin, was discovered as employees were loading the car with fiber egg crates made by the company. Several hundred crates were consumed during the course of the fire. The freight office fire equipment and employees of the company were pressed into service but the car was burned to the metal frame base. The local fire department was also called out but the blaze was under control when they arrived. Several other cars loaded with crates were saved by the quick work of the employees.

## Interstate Takes Over Victoria Bag Business

On account of further expansion of the toilet converting division, requiring additional floor space, the Victoria Paper Mills Company, of Fulton, N. Y., have decided to discontinue the manufacture of paper bags. An arrangement has just been made with the Interstate Bag Company, of Walden, N. Y., to take over the entire equipment.

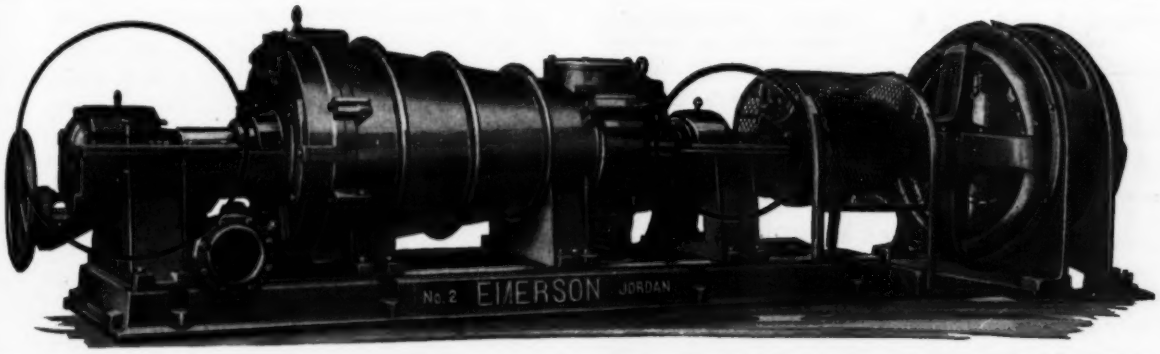
The Interstate Bag Company has been manufacturing quality sacks for over 25 years, and are the originators of the Paper Shopping Bags. They carry a most extensive line of this last named article, supplying the largest users in the country.

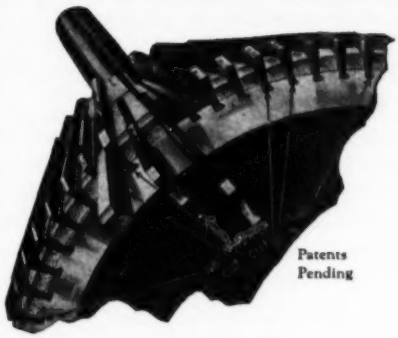
## American Tissue Mills To Use Radio

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., June 4, 1929.—The American Tissue Mills, Inc., have bought from the National Calliope Company of Kansas City, the largest calliope made and it will be heard over the radio from WBZ, the Springfield station, June 6, at 11 a.m. and 6:30 p.m. This will be the first time that any Holyoke paper manufacturing or converting concern ever put on a radio broadcasting program. The plan is to send the calliope all over the country advertising the products made.

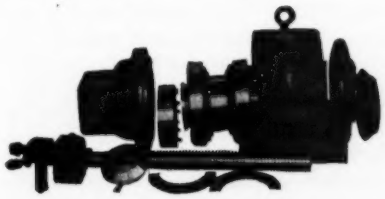
# *The* EMERSON JORDAN *equipped with the* Bolton **BANDLESS** Plug



Patents Pending

**Showing construction of the Bolton Bandless Plug. Knives and woods cannot come out. *NOTE INVERTED WEDGES.***



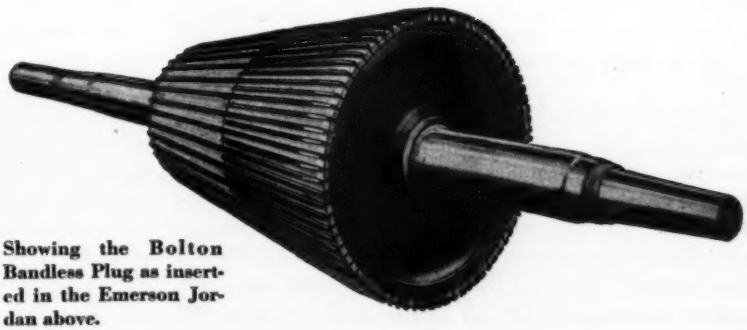
**Detail of Timken end bearing which takes care of both radial and thrust.**

**Now every Emerson Jordan offers you the tremendous advantages of the Bolton BANDLESS Plug and Timken Roller Bearings.**

**These two great features put the Emerson Jordan in a class by itself for unit control, lasting satisfaction and true economy. No other Jordan has these great construction advantages.**

**Make sure of all the benefits and savings that result from these two wonderful improvements in Jordan engineering. Standardize on Emerson Jordans.**

***Write for full information and estimates***



**Showing the Bolton Bandless Plug as inserted in the Emerson Jordan above.**

## The EMERSON MANUFACTURING COMPANY

**LAWRENCE ∞ ∞ ∞ MASSACHUSETTS**

**DIVISION OF JOHN W. BOLTON & SONS, Inc.**

2683

PAPER TRADE JOURNAL
ESTABLISHED 1872

10 East 39th St., New York

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Vol. LXXXVIII New York, June 6, 1929 No. 23

## ELECTRIC POWER IN INDUSTRY

Three fourths of American industry is at present powered by electricity, according to a survey just made public by the National Electric Light Association on statistics gathered by the United States Bureau of the Census in its 1927 census of manufacturers.

All of the net increase of 9,712,894 horsepower added to the prime movers employed in manufacturing establishments since 1919 has been in electric motors operating on power furnished by the public utility enterprises of the country. During the eight years between December 31, 1919, and December 31, 1927, the installed horse power of steam engines and turbines has decreased by one-half of 1 percent, that of internal combustion engines has dropped by 25 per cent, or in the amount manufactured practically has increased by 1 percent, while the installation of electric motors running on purchased power has increased by 106 percent, or more than doubled.

Concurrently with this increase in the installation of motors operating on purchased power there has been a noteworthy electrification of machinery running on power furnished by the industries themselves. The installation of motors operating on energy generated within the factories has increased since 1919 by 4,246,908 horsepower—or by 61 percent, with the result that at the end of 1927 there were actually installed within the industries of the country 30,361,106 horsepower of electrically-operated equipment.

Installation of motors operating on locally-generated power is, however, being undertaken at a diminishing rate of increase. Between 1925 and 1927 the annual increase averaged only 480,683 horsepower per year, as against 717,764 horsepower between the years 1923 and 1925. On the other hand, the installation of motors operating on power purchased from utility lines showed an average annual increase, in the period 1925 to 1927, of 1,638,084 horsepower, as against an average of 1,268,024 horsepower in the period 1923 to 1925.

In a recently published series of charts entitled "Power Manufacturing Industries, 1927," the National Industrial Conference Board shows that the public utility power plants of the country generate 60.4 per cent of their annual production of 87,851,000,000 kilowatt hours by steam plants and 39.6 per cent by water power. Of the total developed water power on January 1, 1929, amounting to 13,572,000 horsepower, 87.6 percent was produced by public utility and municipal plants and 12.4 percent by manufacturing and miscellaneous enterprises. The total installed mechanical power in the United States is 39,040,563 horsepower.

In a statement accompanying these charts the board says: "In former days the manufacturer was obliged to produce within his own plant the power to his machines. Today he can, if he so desires, go to the specialist in power production, the central electric station and buy his power. If formerly the cost of the power plant and the economies of operation effected by increasing its size were among the factors which prompted large scale production, today the ease with which the manufacturer can procure power by purchase lightens the difficulties of the small enterprise and puts it in a stronger competitive position."

## GERMANY MAKES PAPER RECORD

Production of paper and paper products in Germany broke all records in 1928, Trade Commissioner William T. Daugherty, Berlin, reports to the Department of Commerce.

Output was placed at 2,302,208 short tons of paper, 479,477 tons of board, 1,266,195 tons of chemical pulp, and 914,844 tons of mechanical pulp, by statistics compiled by the Central Committee of the Paper, Board, Chemical Pulp and Mechanical Pulp Industry.

These figures represent increases of 5 per cent, 3 per cent, 8 per cent, and 2 per cent respectively over the preceding year, while compared with 1913, the production of paper shows an increase of 32 per cent, chemical pulp 37 per cent, mechanical pulp 23 per cent, and boards 15 per cent.

Production of pulp and boards in Germany has been maintained at an almost constantly increasing volume since 1920. The production of paper, however, has undergone a greater degree of fluctuation. There was a sharp rise in the volume of output between 1920 and 1922, when the amount manufactured practically reached that of 1913. The following year, however, production dropper by 25 per cent, or in round number of 1,306,200 tons. In 1924 conditions improved and the industry reported an output of 1,517,900 tons, and since that time there has been on the whole a steady upward trend in the output of this product.

The situation in the paper industry seems to have been eminently satisfactory during 1928, according to reports from different branches of the industry. There was the usual seasonal reduction by the mills during the last quarter of the year, but nevertheless production remained steady and stocks were cleared. The larger concerns are reported to be carrying no stocks on hand of finished products, and except for a drop in the price of unbleached chemical pulp pue to over-production, prices were stable. Newly developed outlets for chemical pulp in the textile industry moreover had its share in improving the general tone of the pulp market. The last quarter of 1928 was marked by a general business depression, one reflection of which was increasing industrial costs. Whatever resultant price dislocation occurred for finished products was offset by the effect of the increased cartelization of the German paper industry, which would effect exports as well as the domestic market.

## Canadian Technical Summer Meeting Program

The Summer Meeting of the Technical Section of the Canadian Pulp and Paper Association will be held on June 19, 20 and 21. Members are to assemble at Montreal or Three Rivers as may best suit their convenience on Tuesday, June 18. For those who intend going direct to Three Rivers, arrangements will be made for accommodation at the Chateau.

Special sleepers will be attached to the train leaving Windsor Station, Montreal, for those assembling at Montreal. The train leaves Windsor Station 11:15 p.m. standard time. The secretary will have all tickets, transportation and berths. These cars will be held over at Three Rivers on the morning of Wednesday, June 19, and may be occupied till 7 a.m.

Wednesday, June 19, Three Rivers: 8:00 (D. T.) breakfast at Chateau du Blois; 9:00 a.m. Assembly in School of Papermaking and inspection of school. At the School, the party will be divided into four groups for visits to the various mills: Canadian International, St. Maurice, St. Lawrence, Wayagamack. 10:00 a.m. Groups leave for mills; 1:30 p.m. Luncheon at Chateau; 2:30 p.m. Groups again formed for visits to mills; 7:30 p.m. Leave for Quebec—special cars with diner attached. Dinner will be served en route. 9:45 p.m. Arrive at Quebec. Proceed to Chateau Frontenac.

Thursday, June 20: 10:00 a.m. Morning Session of the Section at the Chateau Frontenac; 1:00 p.m. Luncheon; 2:30 p.m. Afternoon session; 7:30 p.m. Dinner. Informal. Entertainment.

Friday, June 21: 10:00 a.m. Visits to paper mills. Anglo-Canadian and Ste. Anne. If sufficient members are desirous, arrangements can be made for a sight-seeing trip or for golf on Friday afternoon. Members will make their own arrangements for transportation home on Friday. Transportation from Montreal to Three Rivers and from Three Rivers to Quebec will be taken care of by the secretary.

As will be seen in the above outline of program this year's Summer Meeting will include a day—Thursday, June 20—devoted to papers and discussions on subjects of interest to the industry and will combine serious proceedings with the recreational features which have always contributed to the enjoyment of these gatherings. The fact that two days' meetings will be held in Quebec, the home of R. A. McInnis, chairman of the section, is an assurance that nothing will be left undone to make them a success and enjoyable from every point of view. The Quebec program will include some very worth while features as well as some quite out of the ordinary.

## To Hold Trade Practice Conference

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 3, 1929.—Announcement has been made that a second trade practice conference will be held in this city on June 13 under the auspices of the Federal Trade Commission of the waxed paper industry.

Commissioner Charles H. March will preside and the conference will be held in the building of the United States Chamber of Commerce.

A trade practice conference for the kraft paper manufacturing industry has also been authorized by the Commission at which Commissioner William E. Humphrey will preside. The time nor place for this conference has not been set. In connection with the waxed paper conference the Commission in its announcement says:

The first trade practice conference for this industry was held in Washington last June. Later it became evident, through practical experience in the industry with the operation of the rules adopted that a revision of some rules was desirable. The purpose of the second conference is to present and discuss the reasons for revision deemed necessary, so that constructive forces in the industry may operate to eliminate alleged misunderstandings or confusion.

The baking industry has been invited to appoint a committee to attend this second conference so that their views may be made known.

Last October the American Waxed Paper Association requested that the date set by the commission upon which the rules for the industry would become effective, namely, October 15, 1928, be extended to November 15. It was believed that such extension would prevent confusion and misunderstanding and make operation of the rules more effective. The extension was granted. The effective date was again extended to January 1, 1929.

Among practices discussed at the first conference were: Inducing breach of contract, imitation of trade marks or trade names, enticement of employes, defamation of a competitor or disparagement of his goods, use of inferior materials, and discrimination in price by means of split shipments.

## News Print Production for April

Production of news print in Canada during April 1929 amounted to 221,784 tons and shipments to 220,270 tons according to the News Print Service Bureau. Production in the United States was 118,679 tons and shipments 121,548 tons, making a total United States and Canadian news print production of 340,463 tons and shipments of 341,818 tons. During April, 20,950 tons of news print were made in Newfoundland and 1,424 tons in Mexico, so that the total North American production for the month amounted to 362,837 tons.

The Canadian mills produced 75,776 tons more in the first four months of 1929 than in the first four months of 1928, which was an increase of 10 per cent. The United States output was 10,331 tons or 2 per cent less than for the first four months of 1928. Production in Newfoundland was 8,224 tons, or 11 per cent more in the first four months of 1929 than in 1928 and in Mexico 1,358 tons more, making a total increase of 75,027 tons, or 6 per cent over the same period in 1928.

During April the Canadian mills operated at 85.5 per cent of rated capacity, United States bills at 81.4 per cent and Newfoundland mills at 102.3 per cent. Stock of news print paper at Canadian mills totalled 25,741 tons at the end of April and at United States mills 27,102 tons, making a combined total of 52,843 tons, which was equivalent to 3.4 days' average production.

## Cellulose Research at Darmstadt

On Thursday, April 18, occurred the inauguration of a department for Research Work on Cellulose by the Instituts fur Cellulosechemie der Technischen Hochschule, of Darmstadt in the presence of the Ministers of Culture and Education, the Ministers of Finance and the heads of the Technical Hochschule and a considerable assemblage of guests representing various industries interested in this subject.

The head of the Institute, Herr Prof. Dr. K. G. Jonas, welcomed the guests, thanked them in the name of the newly inaugurated work, described their future plans and the work to be undertaken in connection with the German Cellulose Industry.

Amid the general applause of the assembly he concluded a general description of the research work of the Institute and a resume of the work to be undertaken.

Taking part in the breakfast that closed the proceedings in the Students' Rooms were the president, the Minister of Finance, the head of the German Association of Paper Makers, Herr Direktor Schmeil, of Dresden, toastmaster on the success of the Institute fur Cellulosechemie and the spread of German knowledge and enterprise.

The guests dispersed with the assurance that the work of the leaders of the Institute in the future would have both their support and approval.

## Thunder Bay Paper Co.

The first cargo of paper from the Thunder Bay Paper Company was destined for Chicago and consists of 1,000 tons. Other shipments are to follow at 7½ day intervals. Both paper machines are now running continuously at the mill, turning about 225 tons of paper per day.

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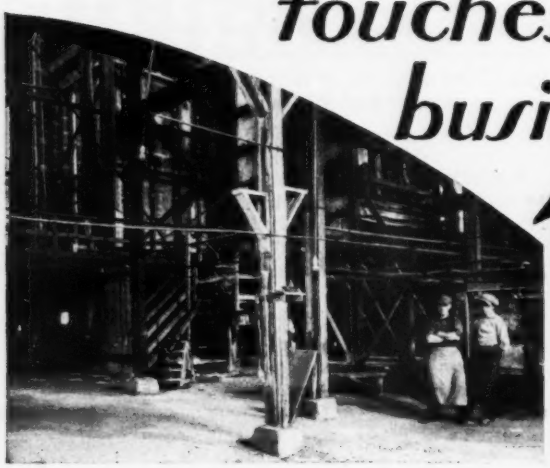
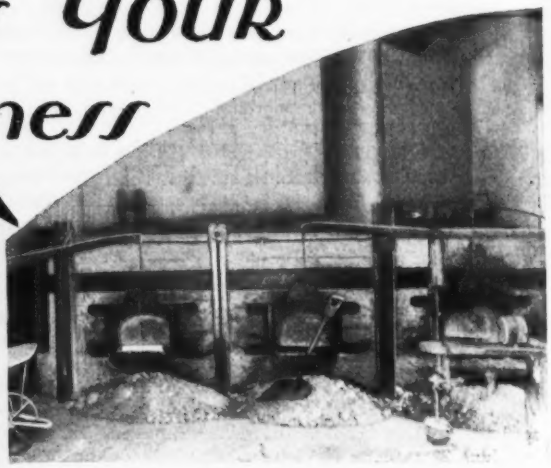


*Interior View of Chamber Sulphuric Acid Plant*



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Section of the
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AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

# Detection of Starch, Glue and Casein In and Upon Paper*

By T. C. Bentzen[1]

For the detection of these materials we need the following reagents:

DILUTED IODINE SOLUTION: 1.8 gr. Potassium Iodide dissolved in 100 cc cold distilled water. After dissolving, is added 1.3 gr. Iodine, and after this is completely dissolved, a crystal of Iodine is added to keep it more durable. It must be stored in a yellow bottle and not exposed to light.

2.5 cc of this solution is diluted with 22.5 cc cold distilled water and a small crystal of Iodine added. I keep this reagent in a dark yellow bottle with a rubber stopper, through which a piece of a glass rod is inserted, long enough to reach the bottle to the bottom. This arrangement enables me to bring bigger and smaller drops or streaks of the reagent upon the paper to be tested. The reagent must frequently be controlled through a starch solution or through paper which is known to contain starch, to be sure that it has not lost its reactivity.

AMMONIUM MOLYBDATE IN FRESH SOLUTION (Carson's Method) 1 gr. Ammonium Molybdate C. P. Cryst. dissolved in 83 cc distilled water and added 8 cc Nitric Acid sp. gr. 1.2 (about 1 concent. Acid plus 3 cc $H_2O$).

To start with, I make the Iodine test on starch, bringing a drop of the reagent upon the paper in question, and experience has taught me that:

1. Pastry starch will react uniform gray-blue, blue, dark-blue until nearly black, according to quantity.
2. Raw starch will show distinct dark blue small spots, and
3. If no starch is present, the paper will take the color of the Iodine.

The reaction will be the same, whether common starch, such as cornstarch or potato starch, is present, or the special kind of starch which is designated as top-size gum or more plainly as "gum".

If we tear the paper in the proper way it will split into thinner sheets. I then put a minute drop of the reagent upon the inner surface and at the same time another drop upon the outer surface. After some practice one is able to estimate whether the starch is only upon the surface, only in the paper, or perhaps both upon and in it. If the starch is upon the surface, it is very likely to be gum.

If a finished fine paper does not show any starch reaction, especially no top-size (surface) reaction, then we may be sure that glue (or more seldom, casein) is present and this may sometimes also be the case in combination with starch.

### Test for Glue

The test for glue is according to my experience most practically performed as follows:

1. About 2 grams of the paper is folded in about ½ inch wide zig-zag and then cut into about ¼ inch strips.
2. The paper is thoroughly boiled in a beaker for about ½ hour with about 250 cc. distilled water.
3. The paper strips are lifted out, letting the extract drop off as far as possible into the beaker.
4. The extract is evaporated to about 25 cc. volume.
5. It is then filtered to hold back the paper fibres.
6. Transfer about 10 cc. of this extract into a test tube.
7. Add about 5 cc. of the Ammonium Molybdate solution.

A white voluminous precipitate indicates glue (revealing minute traces). If no precipitate forms no glue is present.

### Detection of Casein

But the precipitate can as well indicate casein. I have tried to construct a method which would enable us in any easy way to detect casein apart from glue founded on the quality of the casein to be precipitated through hydrochloric acid and the precipitate to dissolve in an excess of hydrochloric acid, and in ammonium hydroxide or sodium hydroxide, but presence of rosin is causing unreliable results. I shall therefore with respect to casein, refer to page 110 of the 1928 edition of TAPPI's Paper Testing Methods, where a very exact and abundant description is given of the Millon Method.

### Millon Method

As told, the ammonium molybdate test will indicate glue and casein either singly or together. A little tannin solution (1 part acid tannic to 10 parts distilled water) will give the following reactions:

1. Precipitation: glue, but casein may also be present. After all the glue is precipitated test the filtrate with ammonium molybdate or Millon's reagent for casein.
2. No precipitation: no glue is present. Test with ammonium molybdate for casein.

* Presented at Interstate Conference of Paper Technologists Club, Kalamazoo, Mich., May 17, 1929.

[1] Member TAPPI; Chief Chemist, Whiting-Plover Paper Co., Stevens Point, Wis.

# Speeding Up Corrugated Box Board Machinery

The manufacture of corrugated box board is, in a sense, a new art in the paper industry, and since its popularity has increased, the trade demands have been for better boxes. The first step in the solution of the problem was the speeding up of existing equipment. In other words, machines that were built to run sixty feet per minute were speeded up to one hundred feet per minute; machines that were built to run eighty or ninety feet per minute were speeded to to 150 feet per minute or even faster. Inefficient labor was weeded out and an effort made to decrease the amount of waste. This was an important factor, since with an increased production the amount of waste tended to go up in more than direct proportion, thus increasing the cost of the board and cutting down net production materially.

### Increasing Output

As the machines were speeded up, the weak points in their design which caused shut-downs had to be taken care of by the machinery manufacturers and conveniences which would decrease the tendency of the machines to clog and make waste were incorporated in the new design. Through the experience the machinery manufacturers gained in working on the equipment, they have been able to plan for still greater production. In order to secure this increase, it is necessary to operate at higher speeds than ever before, and since the operation of the equipment depends so largely on the efficiency of the human element, a marginal point is reached beyond which an increase in speed does not

FIG. 1.

The unit at the left is the corrugator and the smaller unit at the right the draw roll. A.—Dancer roll which operates rheostat B by means of a chain. C.—Push buttons to start and stop entire machine. D.—Push buttons to start and stop corrugator and draw roll. E.—"Fast" "Slow" to control speed of entire machine. F.—Rheostat to adjust speed of corrugator and draw roll separately. G.—Rheostat to adjust speed of conditioning section motor. H.—Speed indicator. I.—Bell which signals readiness to start from cutter end of machine.

give an increase in production. Other limitations, of course, are the character of the materials which have to be worked up into boxes, and the physical limitations of the machine itself, these establishing a point beyond which it is impractical to go, as far as speed is concerned.

The second method of increasing production has been to increase the width of the machine. Here the restriction is primarily one occasioned by the inability of independent corrugating plants to handle rolls exceeding certain widths and the inability of existing equipment to adapt itself properly to this increase in width. Another element is the cost of equipment built to take care of wider rolls. Due to the fact that greater strains are set up in the machines by virtue of the wider span and the high operating speeds, it is necessary to employ a much more rigid type of construction in order that the machine may be mechanically fit.

### Installation in Robert Gair Plant

The Robert Gair Company at its Thames River Plant, outside of New London, Conn., has just installed two Langston corrugating and double facing machines. One of these a 63 inch machine, is built on a basis of attaining speeds of from 250 to 300 feet per minute. The second, an 85 inch machine, is built to take advantage of width and is built to run from 200 to 250 feet per minute. Both of these machines in tests have attained their maximum speeds, that is, the 63 inch has been run over 300 feet per minute, producing a seasoned scored sheet ready to be made into boxes, while the 85 inch machine has been run at speeds slightly over 250 feet per minute, slitting and scoring the blanks ready to be made into boxes.

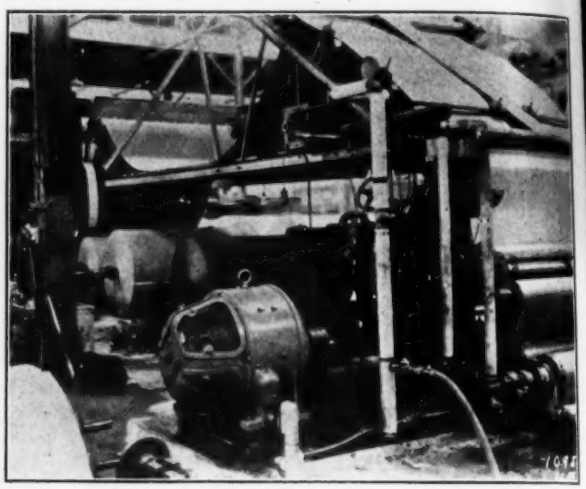

FIG. 2.

Opposite side of corrugator from that shown in Fig. 1. Corrugator motor in foreground. The dancer roll rheostat seen directly above this motor.

With these two machines the Robert Gair Company, which owns them, and the Samuel M. Langston Company which built them, believe they have set the pace not only for corrugated box board fanufacturers, but for corrugating equipment as well. These two machines are of equal length, the length overall from one base to the last cut-off being 196 feet. Both machines are provided with two cut-offs, so that two different length sheets can be cut from the same web of paper. They are equipped with duplex slitting and scoring attachments, so as the board is made the sheets are trimmed and scored ready for conversion into boxes. The second operation runs these through a printer-slotter, delivering a printed blank ready for taping.

Due to the inertia of the cut-off equipment, it is necessary to vary the position of the target along with the speed in order to get a uniform length of sheet each time. To speed up the equipment or slow it down the operator uses a *"Fast"* or *"Slow"* push button station located at the corrugating end of the machine. This merely starts and reverses a small motor which runs a rheostat on the control set. The same motor changes the position of the cut-off target. As long as the operator keeps the *"Fast"* button depressed, the machine continues to speed up, and similarly as long as the *"Slow"* button is depressed, the machine continues to slow down.

### Special Features

The double-facing section is what is known as an eight-section machine. It has 48 feet of heating surface and 42 feet of con-

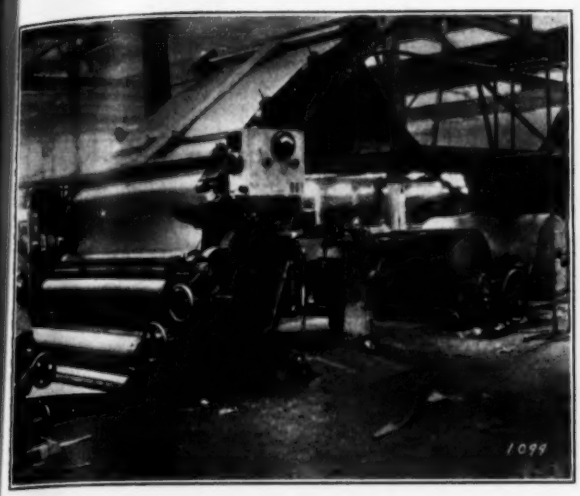

FIG. 3.
Another view of the corrugator section.

FIG. 5.
Motor generator set and control.

ditioning surface. One of the outstanding features of the equipment is the balancing of the heating and conditioning sections.

The handling of roll stock is taken care of by elevating mill roll stands, which lift the rolls from the dollies and deposit them in the stands without any effort on the part of the operator. This eliminates overhead cranes and allows the two liner rolls and the straw roll to be placed nearest to the point at which they enter the machine, giving a uniform draw for each roll of paper. Overhead conveyors are provided so that the single faced sheet passes from the corugating end of the machine to the double-facing unit without interfering in any way with the handling of the roll stock.

### Straw Feeding Device

The straw feeding or tensioning device on the Gair machine is something radically new. It is controlled by a motor synchronizing with the corrugating motor so that its variations in speed are always in unison with those of the corrugator. It is further automatically controlled as to the tension of the straw through a dancer roll and separate rheostat as shown in the illustration. With this device the straw is automatically tensioned, the raising or lowering of the dancer or tensioning roll speeding up or retarding the feed rolls that feed the straw.

This tension roll takes care of any difference of adjustment of the corrugating roll and also smooths out the fluctuations in tension caused by lopsidedness of the straw roll. This gives a steady uniform feed of straw board into the corrugator, and allows a maximum speed of the machine to be attained, regardless of the condition of the roll of straw paper and makes it possible to produce a better grade of box board even at these higher speeds.

The machines are provided with recording as well as indicating tachometers, so that the operator always knows the speed at which the machines are running while the superintendent of the plant has an exact record, not only of the shut-downs, but of maximum and minimum speeds at which the machines are running during the day. A recording counter records the number of lineal feet produced on the corrugator as well as the number of lineal feet of finished board. The cut-offs are provided with counters which keep track of the number of sheets cut, so that a complete record of the performance of the machines is possible from day to day.

An interesting feature of these machines is the electrical equip-

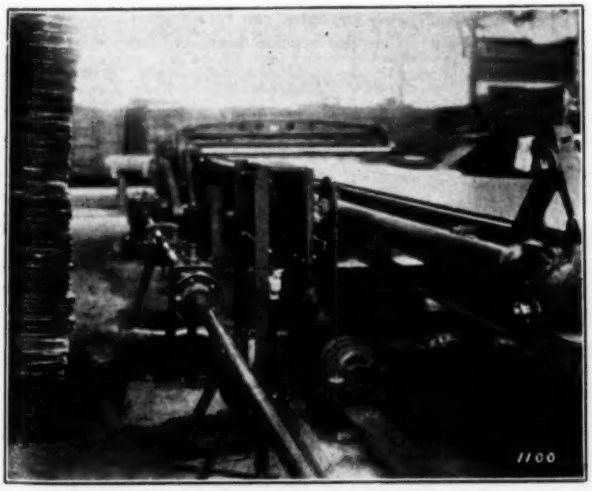

FIG. 4.
Generator field rheostat and driving motor located at side of cutter. A gear reduction unit is located behind the large sprocket through which the cutter trip is adjusted.

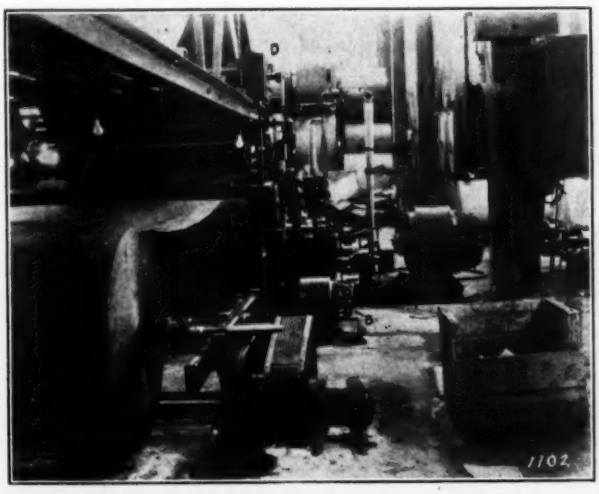

FIG. 6.
Corrugating section. Motor B drives draw rolls, Motor C drives corrugating roll. Rheostat D is the dancer roll rheostat used to keep the two motors in slip. Motor A is torque motor used to change rolls.

ment furnished by the Reliance Electric and Engineering Company, of Cleveland, Ohio. In machines of this length fitted to operate at these high speeds, the control of the machines becomes one of the most essential features from an operating standpoint. The drive proper consists of three direct-current motors, the corrugator motor, the tension roll motor, and the double-facing motor, and a 3 phase, 60 cycle, 440 volt control set by means of which the operator can regulate the speed of the set and also, in starting, bring the motors up to speed together.

On the other hand, any section may be started or stopped without disturbing the rest of the drive and the speed of the corrugating section can be varied keeping a constant speed on the double-backer section. The entire drive may be started or stopped, accelerated or decelerated from push buttons mounted at the corrugating section. The relative speeds of the corrugating section and the double backing section can be adjusted from the same point by a rheostat and the corrugating section may be stopped or started without disturbing the rest of the drive. "Inching" buttons are also provided here, so that the operator can jog the machine.

Start-stop buttons for the double-backer motor are strung out all along the conditioning and heating section, making it possible to control that motor from several convenient points. By means of this simple system of control, the operator can easily and quickly adjust his machine to take care of conditions which arise. The mill roll stands are provided with independent motors and controls for loading and unloading the rolls of paper. These machines are equipped throughout wherever possible with ball or roller bearings.

The corrugating sections are equipped with force-feed lubrication for all heated bearings, the rest of the bearings being provided with grease lubrication.

## C-E Water Level Indicator

A simple device which permits the placing of water level indicators at any desirable location or elevation has been recently put on the market by Combustion Engineering Corporation, New York.

Fig. 1, below, shows how this water level indicator operates and why it is possible to situate it at any convenient location. The usual water column is shown connected to the boiler drum. Inside the water column is a non-corrosive float suitable for the maximum working pressure for which the boiler is designed. This float is direct-connected by means of a non-corrosive wire extending downward through a small pipe to an indicator in the water glass. The circuit around this indicator is filled with cold water which has no corrosive effect on the glass.

The indicator is so adjusted that when the float in the water column on the drum is in its normal position, the indicator within the lower glass is also in the center of the glass, its normal level condition. The indicator consequently fluctuates correspondingly with the up and down movement of the water column float at the drum.

It is possible to locate the indicator to meet any local conditions. If it is not practical to drop the indicator vertically from the water column on the drum, arrangements are easily made whereby the water column can be placed inside the drum, or, as shown in Fig. 2, horizontal extensions of any length can be made to bring the water column to any desired position.

To prevent leakage in case the water glass should be broken, an automatic shut-off valve is placed in the circuit directly above the glass. This conical valve is attached to the wire between the water column and the water level indicator in such a position, as shown in Fig. 3, that when the glass is broken, and the water released, the valve is forced into the valve seat thus closing the cold water circuit.

After a new glass has been put in place, valve "A", Fig. 1, is open, valve "B" remaining closed thus equalizing the pressure above and below the valve.

The float then returns to the position of the water level and in so doing, lifts the valve "CV" which allows the water to again fill the indicator gage glass.

Fig. 1

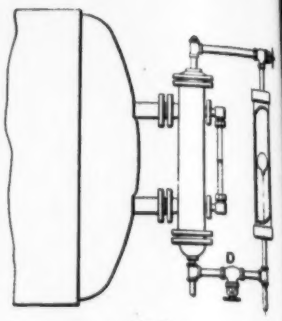

Fig. 2

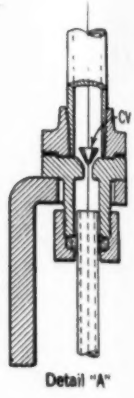

Fig. 3

The device is especially desirable from a convenience standpoint and also, because it operates in a cold water circuit, it eliminates the continual replacing of glasses on ordinary water columns, which are eaten away and broken so easily by the corrosive action of the hot water. By having cold water only, in contact with the glass, the usual round glass is suitable for exceedingly high pressures.

The C-E Water Level Indicator can be installed in conjunction with, or separate from, the regular high and low alarm signal system.

## P. H. Glatfelter Co. TAPPI Member

The P. H. Glatfelter Company, of Spring Grove, Pa., has become a corporate member of the Technical Association of the Pulp and Paper Industry. The company will be represented by P. H. Glatfelter, vice president and treasurer, who is also president of TAPPI.

This company manufactures one hundred tons daily of S. S. and M. F. book, label, writing bonds, mimeograph, drawing, eggshell, envelope, lithograph and tablet papers and forty tons daily of soda pulp. The P. H. Glatfelter Company has long been an active participant in Technical Association activities and is one of the most progressive companies in the industry.

## Japanese Paper Production Increase

WASHINGTON, D. C., June 3, 1929.—Paper production in Japan by the mills of the Japanese Manufacturers' Association during February totaled 57,670 tons and sales 60,610 tons as against 57,226 tons and 55,575 tons during January.

# Microscopical Analysis of Paper*

By K. P. Geohegan[1]

A paper mill laboratory is incomplete without a microscope, and therefore, most paper mill laboratories have one. Too often, it stands unusued except when it is needed to determine the fiber content of paper. In other words, many paper mill chemists use it when they can not get their information in any other way, and often ignore it when it would furnish a rapid solution to their problems.

It would be impossible to give, in so short a paper as this, detailed descriptions of the many uses of the microscope in a paper mill. One must choose between a thorough discussion of one use and a series of unconnected notes describing briefly various applications of the microscope.

The latter method seems preferable: first, because it is of wider interest; and second, because in paper mill work, the microscope can be used to solve numerous unrelated problems without attention to many of the finer points that may be desirable but are not necessary.

The chemist's neglect of the microscope is due usually to his training. In many cases, his only acquaintance with it has been during a short course in biology. As a result, most laboratory microscopes are of the simple type used in teaching zoology and botany. It is unfortunate that more colleges do not follow the example of Cornell University and require that their students of chemistry take a course in the use of the microscope.

The men in several branches of science have developed types of microscopes to meet their own needs. Biologists require high-powered instruments with critical illumination, and only occasionally use polarized light. Petrographers need polarized light and graduated, rotating stages, and usually only low magnification. Metallographers do most of their work with vertical illumination, and their microscopes are generally provided with stages that can be raised and lowered. Chemists can use advantageously all of the above features and their microscopes should be constructed so as to permit the use of a wide variety of accessories.

There is no better book on the use of the microscope in the chemical laboratory than "Elementary Chemical Microscopy," by Dr. E. M. Chamot, Professor of Chemical Microscopy and Sanitary Chemistry at Cornell University. Dr. Chamot has designed for chemists a microscope that is simple and yet will accommodate the required accessories.[2] The Bausch and Lomb Optical Company makes an instrument according to his specifications.

It has been mentioned above that the microscope is used most, in paper mill laboratories, for the determination of fiber content. The procedure for this determination is too well known to require a description. In connection with this use of the microscope, however, there are several points which may be interesting.

### The Dot Method

The Technical Association of the Pulp and Paper Industrly recently recommended for trial, a "Dot Method" for the determination of fiber content that was suggested by Mr. H. T. Case, of Sears, Roebuck and Company.[10]

I wish to mention the excellent results that we have obtained by this method. It gives consistent results, which check well with the beater furnishes.

We have not a mechanical stage, and, instead of using a dot, we find it more convenient to use a line horizontally across the field of the microscope. We count all of the fibers in the field that cross this line, counting a curved fiber each time it crosses the line. Then we move the slide horizontally to the adjacent field, and so across the slide. In this way, we make three counts across in different positions on the slide. The average difference between the results on the first and second slides is two percent.

If the microscope is not equipped with a mechanical stage, a slide may be cut so that it will fit between the posts of the stage clips. The clips are then turned toward each other and used to hold the slide in a horizontal position. This slide serves as a guide for the slide containing the stained fibers.

The most convenient line is furnished by a cross-hair or a graticule eyepiece, or by a graticule disc placed on the diaphragm of one of the usual Huygenian eyepieces. If none of these are available, a fiber of silk may be stretched across a round coverglass, or across the diaphragm of the eyepiece, and cemented in place. Another method is to mark a line across the diaphragm of the microscope mirror, or across the source of illumination, and to project this line into the field by means of the Abbe substage condenser. A disadvantage of the last method is that the substage must be refocused whenever the body tube of the microscope is raised or lowered.

The "Dot Method" of determining the fiber content has several advantages: it does not require that the length of the fibers be considered, as do other counting methods; it is not influenced so much as is the estimation method by the depth of color given by the stain; and it permits inexperienced observers to obtain accurate and concordant results.

### Distinguishing Between Fibers of Coniferous and Deciduous Wood

The stains which are recommended for distinguishing between sulphite and soda fibers, distinguish between the fibers of coniferous and deciduous wood, and not between the methods by which they were cooked.

Judging from the recent literature, most of the paper mill chemists are using Alexander's Stain[11] for this purpose, and are overlooking E. L. Selleger's Reagent, which gives the same distinction more easily..

E. L. Selleger's Reagent consists of a solution of calcium nitrate, potassium iodide, and iodine.[12] According to the article that describes it, Selleger's Reagent colors the various fibers as follows: bleached fibers, light rose; unbleached fibers from resinous wood, clear yellow; poplar and birch fibers cooked by the soda process, violet blue; esparto, blue; manila hemp, wine red; linen

BIBLIOGRAPHY

* Presented at Interstate Meeting, Kalamazoo, Mich., May 17, 1929.
[1] Member TAPPI; Chemist, Aetna Paper Co., Dayton, Ohio.
Elementary Chemical Microscopy.—Chamot. Wiley & Sons, New York, 1921.
[2] Pages 59 to 64.
[3] Pages 388 to 391.
[4] Pages 404 to 405.
[5] Pages 353-357, 363-364, 385-386, 413.
[6] Pages 320 to 333.
[7] Pages 255 and 256.
[8] Pages 334-336, 342-343.
[9] Pages 350 to 353.
[10] Paper Testing Methods of the Technical Association of the Pulp and Paper Industry. Pages 21 and 22. Lockwood, New York, 1928.
[11] Alexander's Stain.—Cameron. TAPPI Papers, June, 1924, Series 7, No. 1, page 45.
[12] Observations on Paper Testing. Paper XXXII, No. 25, pages 3 to 6 (October 11, 1923).
[13] The Chemistry of Pulp and Paper Making.—Sutermeister, page 390. Wiley, New York, 1920.
[14] Anleitung zur Mikrochemischen Analyse der Wichstigsten Organischen Verbindungen. Zweites Heft. (Der Wichtigsten Faserstoffe.)—Behrens. Voss, Leipzig, 1896.
[15] Mikrochemische Analyse. Behrens-Kley. Voss, Leipzig, 1921.
[16] Organische Mikrochemische Analyse. Behrens-Kley. Voss, Leipzig, 1922.
[17] Manual of Petrographic Methods.—Johannsen. McGraw-Hill, New York, 1918.
[18] Essentials for the Determination of Rock-Forming Minerals.—Johannsen. University of Chicago Press, 1922.
[19] A Textbook of Mineralogy.—Dana-Ford. Wiley, New York, 1922.
[20] The Microscopic Determination of the Nonopaque Minerals.—Larsen. U. S. Geological Survey Bulletin 679.
[21] Elements of Optical Mineralogy.—Winchell. Part 1. Wiley, New York, 1922. Part 2. Wiley, New York, 1927.
[22] The Optic and Microscopic Characters of Artificial Minerals.—Winchell. University of Wisconsin, 1927.
[23] Tables for the Identification of the Inorganic Salts.—Fry. U. S. Department of Agriculture, Bulletin 1108.
[24] Iodic Acid as a Microchemical Reagent for Combinations of Soluble and Insoluble Compounds of Calcium, Strontium, and Barium.—Deniges. Chem. Abs. 14 (1920), 2596. Compt. Rend. 170 (1920), 996-998.
[25] International Critical Tables. Volume I. Pages 320 to 338. McGraw-Hill, New York, 1926.
[26] Allen's Commercial Organic Analysis. Fourth Edition. Volume I. Pages 409 to 418. Blakiston, Philadelphia, 1912.

and cotton, rose or brownish groundwood, jute and straw, deep yellow.

The differences between many of the above colors are so slight that they are hard to distinguish. However, the blue of deciduous wood fibers and of esparto are easily distinguished from the pale colors of the other fibers.

This strain is applied in the same way as the Herzberg stain and is therefore more convenient than the Alexander's Stain and less liable to variations due to differences in procedure. The disadvantage of E. L. Sellenger's Reagent is that, because it contains little iodine, it soon loses strength.

This disadvantage can be overcome by decreasing the amount of potassium iodide below that recommended in the article. In this way, it is possible to limit the amount of iodine that will go into solution; and the stain can be kept in contact with an excess of iodine, which will replace that lost by standing and by exposure to light. We have found that this stain, when made according to the above principle, gave good results at the end of three months.

Following are two methods that can be used for making this stain so that it will keep its strength.

1. Dissolve 100 grams of calcium nitrate in 50 cubic centimeters of distilled water. Add 3 cubic centimeters of a solution made by dissolving 8 grams of potassium iodide in 90 cubic centimeters of distilled water. Add 1 gram of iodine, and allow to stand for one week. The stain is then ready for use.

2. Dissolve 0.267 grams potassium iodide in 53 cubic centimeters of distilled water. Add 1 gram iodine and allow to stand for two weeks, shaking it each day so as to saturate the solution with iodine. Then dissolve in this solution, 100 grams of calcium nitrate, and the stain is ready for use. By saturating with iodine, a solution containing 1 gram of potassium iodide to each 198 cubic centimeters of distilled water, a saturated stock solution can be made, to which it is necessary only to add calcium nitrate in the proportion of 100 grams to 53 cubic centimeters of the stock solution.

Other stains will give similar color reactions with coniferous and deciduous wood fibers. Mr. Hendrickson of the Mead Fiber Board Company originated the following stain, which gives excellent results.

36.6 cc. Saturated $CaCl_2$ solution. (Sutermeister's),
17.8 cc Distilled water,
18.8 cc Zinc chloride solution (66 per cent, Herzberg),
26.8 cc Iodine-potassium iodide solution (Herzberg).
Aply like Herzberg stain.

Sutermeister's Stain[9] can be used for the same purpose in an interesting way. After the fibers have been placed on the slide, two drops of Solution B is added, and the fibers are well distributed. After two minutes, without removing Solution B, one drop of Solution A is added, and the mixture is stirred with the needles. After one minute, the preparation is covered.

**Permanent Slides**

It is often desirable to make permanent slides of paper fibers so as to have a record of fiber length or of the condition of the fibers after beating. Such slides furnish also a convenient reference to the structural details of the various fibers.

The basic dyes are satisfactory for staining unbleached fibers. Fuchsine, malachite green or methylene blue will give beautiful preparations, which will keep for years if they are protected from the light. I have some slides that I made six years ago, using fuchsine, and are still in excellent condition.

After blotting the water from the fibers, two drops of a 1 per cent solution of the dye is applied, allowed to stand for one minute, and blotted off. The stained fibers then are washed twice with distilled water, dried in the air or in an oven at 105 deg. and mounted in Canada balsam. The basic dyes are not satisfactory for staining bleached fibers.

Congo red stains bleaches fibers but it fades. Safranine is permanent, but inconvenient to apply. I have had the best success with benzoazurin, which stains well and is permanent.

The fibers are placed on a slide with two drops of a solution containing 1 per cent benzoazurin and 1 per cent sodium carbonate. The slide is then heated over a small flame. Upon heating, the sodium carbonate hydrolizes, and the increased alkalinity turns the benzoazurin red. The slide then is removed from the flame. Upon cooling, the benzoazurin becomes blue. After cooling, the dye solution is removed by blotting it with filter paper. The dyed fibers are washed twice with distilled water, dried and mounted in Canada balsam.

There is one objection to slides made with Canada balsam. The refractive index of the balsam is so close to that of the fibers that many of the surface markings and other structural details are not apparent. Diaphane is slightly better. Glycerine jelly is much better but is liable to spoil.

I have used an interesting variation of the staining with benzoazurin. After the fibers have been stained and washed, as described above, the wash water is blotted off. Without waiting for the fibers to dry, they are distributed in a drop of sodium silicate solution and covered. The silicate soon hardens, giving a permanent slide that allows the structural details to be seen better than do the slides made with Canada balsam. At the same time, the alkali in the silicate changes the color of the benzoazurin to a pink similar to the color of fuchsine.

Many of the structural details of fibers mounted in balsam, can be brought out by the use of polarized light. The nicol prisms may be crossed or placed parallel, depending upon the characteristics which are of interest.

Parallel nicols make more noticeable small differences in double refraction. These differences are intensified by the use of the selenite plate. The fibers, although unstained, appear colored upon a light field. This arrangement is excellent if it is desired to recognize the fibers by their double refraction; but the variety of colors, due to the differences in double refraction, often obscures structural details which are apparent with crossed nicols.

Dr. H. Behrens, in his book on the "Microchemical Analysis of the Most Important Organic Compounds"[14] described the differentiation of fibers by means of their double refraction. This method is satisfactory only in a general way. The difficulty lies in the variation in double refraction between individual fibers from the same source, and between different parts of the same fiber. Thus, the ranges of double refraction of two kinds of fibers may overlap.

Dr. Behrens described, in the same book, the differentiation of fibers by means of the dichroism imparted to them by certain aniline dyes, and also described differential staining by aniline dyes. He recommended combinations of aniline dyes which he said gave as good results as the Herzberg Stain. Dr. Behrens was a marvelous technician, and these methods are hard to duplicate. I have had promising results from some of them, but never have been able to control all of the factors to the point of having confidence in the results.

**Qualitative Analysis**

Qualitative Analysis by means of the microscope has many advantages over the usual methods. The ability to analyze such small amounts of materials, appeals immediately to the imagination; but this is a minor advantage. More accurate information, more rapid analysis, and greater convenience, are the factors that make valuable this method of analysis.

Reference has been made to a book by Dr. Chamot that describes fully the methods used in testing for all of the common elements. Books by Dr. Behrens[15,16] include also tests for the rare elements and for many organic compounds.

Most of the qualitative tests are carried out in drops of water on microscope slides. The products of the reactions are recognized by their crystal forms, by their colors and in some cases, by their appearance in polarized light.

One can make a qualitative analysis in a short time, seated comfortably at a desk, and without the nuisance of hydrogen sulphide precipitations. Evaporations are made on a microscope

slide in less than a minute; fusions on a piece of platinum foil take little more time.

In most cases, the elements can be identified directly in a solution of the material, without making a separation. This is a great advantage in commercial work. The chemist usually has a good idea of what he may expect to find, and he can test directly for the elements that he suspects to be present, without going through a long procedure to eliminate elements that would give a precipitate of the same color.

The test for aluminum is a good example.[5] The long procedure required by the usual method is well known. If the microscope is used, a drop of the solution to be tested is put on a microscope slide. If the drop is strongly acid, an excess of ammonium hydroxide is added and the precipitate is washed with water, and then dissolved with a drop of water and a very small amount of sulphuric acid. Some solid cesium sulphate is added to the drop. Cesium aluminum sulphate separates as beautiful, clear-cut, colorless octahedra and dodecahedra. The whole procedure requires less than two minutes. In most cases, it is not necessary to neutralize with ammonium hydroxide; then, the addition of cesium sulphate is all that is required. Chromium gives similar crystals; but they are light blue.[4]

One reagent, potassium mercuric sulphocyanate, detects the presence of zinc, cadmium, copper, cobalt and iron, and possibly silver, lead and gold.[6] There are definite, rapid tests for sodium, potassium and ammonium, which are more satisfactory than tests by the usual methods.[6]

If the material being examined is a dry mixture of several salts, individual crystals can be chosen under the microscope and tested separately. In this way, it is possible to determine, not only what elements are in the mixture, but also the way in which they are combined.

Information often can be obtained by evaporating to dryness a solution of the substance and examining the crystals under the microscope. The crystals are identified by their behavior toward polarized light and by their refractive indices.

The crystals of monosodium phosphate, disodium phosphate and trisodium phosphate belong to different crystal systems. By determining the crystal system, it is possible to distinguish between the three. It is possible even to distinguish between their various hydrates by determining the refractive indices.[7]

Descriptions of the behavior of crystals and minerals toward polarized light, and of the determination of their optical constants are given in Dr. Chamot's book and in books on petrography and optical mineralogy.[15, 17, 18, 19, 20, 21, part 1.]

Tables can be obtained that give the optical constants of minerals [14 Part 2, 17, 19, 20 Part 2.] and of inorganic compounds. [22, 23] The International Critical Tables include the optical constants of many organic compounds.[25]

The identification of the mineral fillers in paper, as described in the books on paper testing, is accomplished by means of a system of qualitative analysis of the ash. The conclusions are drawn from the elements and radicals that are found. Thus, calcium and sulphate indicate crown filler or pearl filler; barium and sulphate, barytes or blanc fixe; magnesium and silicate, talc or agalite; aluminum and silicate, china clay.

Unless the microscope is used, the information obtained is incomplete. There is no indication as to whether calcium sulphate was added as natural gypsum, precipitated hydrate (crown filler), or dehydrated calcium sulphate (pearl filler). Barium sulphate may be present as natural barytes or precipitated blanc fixe. Magnesium silicate may be talc or agalite. China clay may be domestic or English. If pyrophyllite talc is present, aluminum silicate will be found and will be reported as china clay. This is a bad mistake, for, so far as its use in paper is concerned, pyrophyllite resembles magnesium talc, and not clay.

The microscope removes these difficulties. Natural minerals, such as gypsum and barytes, can be recognized by their broken grains. Hydrated calcium sulphate has low birefringence and inclined extinction in polarized light; while dehydrated calcium sulphate has high birefringence and parallel extinction may be obscured, because dehydration tends to break up the crystals into small grains. Talc can be distinguished from asbestine or agalite by the shape of its particles. In most cases, domestic clay can be distinguished from English clay by the fineness of its particles. Pyrophyllite talc has the same appearance as magnesium talc.

It should be noted that the distinction between hydrated and dehydrated calcium sulphate must be made on filler which has been obtained without burning the paper, as burning dehydrates the calcium sulphate. This can be done by disintegrating the paper in water, pouring the water through a sieve and allowing the filler to settle.

It would be possible to carry out under the microscope, a qualitative analysis that would give the same information as the analysis described by the books on paper testing. This would require a smaller amount of ash and would take less time; but this is unnecessary. Under the microscope, the size and shape of the mineral grains, their appearance in polarized light, and one or two rapid qualitative tests will generally give all the information that is desired.

The most convenient procedure is to put a little of the ash in a drop of water on a microscope slide and examine it with ordinary illumination and with polarized light. A small amount of iodic acid is then dissolved in the drop. This serves several purposes. The iodic acid decreases the surface tension and allows the filler to be distributed more evenly in the drop. If carbonates are present, it will cause effervescence. If calcium sulphate or calcium carbonate is present, calcium iodate will separate in the form of diamond-shaped crystals which have strong birefringence.[31] If barium carbonate is present, barium iodate will separate in bunches of prismatic needles, some of which are curved.[31] Magnesium can be identified by adding to the drop, ammonium chloride, sodium phosphate and sodium hydroxide or ammonium hydroxide. Magnesium ammonium phosphate separates in characteristic X-shaped crystals.[9] The reference should be consulted for complete descriptions of the crystal forms.

If barium sulphate is present, it will not respond to the above tests; but the barium can be identified by heating a little of the ash on a microscope slide with a drop of concentrated sulphuric acid. Upon cooling, barium sulphate and calcium sulphate (if both barium and calcium are present) will separate in forms that can easily be distinguished.[8]

These few simple tests can be made in five minutes and will give more definite information than the qualitative analysis that is generally recommended. For unusual fillers, a longer procedure is required.

Only a few of the many uses of the microscope have been mentioned. The examination of fibers to determine the kind of wood, the nature of the cooking, the kind and degree of beating; the identification of starches,[30] dirt specks, slime, molds, and bacteria; all require the microscope.

In addition, there are applications which can not be classified; the solving of those little problems that arise every day in a paper mill. The help that the microscope will give in these problems depends upon an understanding of the principles which underlie the applications that have been described.

Here also, polarized light is very useful. Two examples will serve to illustrate ways in which it can be used.

The other day, there was sent to the laboratory some oily material from the inside of a paper machine drier. Oil and rust are to be expected inside driers; but information was desired as to whether any of the solid matter was sludge from the boilers, carried over by the steam. A little of the material was spread on a microscope slide and examined in polarized light. It contained none of the small highly birefringent particles of calcium carbonate that are characteristic of boiler sludge.

In conclusion, it may be said that there is no instrument in the laboratory which can be applied to so great a variety of problems

# The Van De Carr Consistency Regulator

C. R. van de Carr, Jr., manager of the Edmundston mill of Fraser Companies, who was connected for many years with the Laurentide Company and more recently was manager of the Ste. Anne Division of Abitibi Power and Paper Company, is particularly well known in the paper industry for his patented slice which has been installed on a large number of modern, high speed news machines. He has recently divised a new consistency regulator, for which he has been granted United States Patent Number 1,665,425.

### Principle of the Instrument

The principle of his invention consists in mounting a rotary screen in a vat or reservoir. The stock to be regulated is taken from any suitable part of the pulp system and is fed into the vat through an orifice, preferably placed near the bottom of the vat. Between the end of the vat wall and the screen is a baffle to prevent eddying of the material within the vat, the lower edge of the baffle extending close to the bottom of the vat. Mounted between spaced guides is a float which is adapted to regulate the source of water connected to that part of the system from which the stock is taken. Communicating with the interior of the cylindrical screen is a discharge outlet; and suitable means are provided for taking off the stock adhering to the walls of the screen and returning it to the stock supply.

### Description

In the drawings, (11) designates the vat within which is mounted the hollow cylinder (12). The wall of the cylinder is made of screen material (13), such as mesh wire or perforated sheet metal secured to end supports or spiders (14), between the arms (15) of which the white water may flow from the interior of the cylinder. Between the ends of the cylinder and the adjacent walls of the vat, suitable sealing rings or segments (16) may be fitted. The cylinder supports have outwardly extending journals (17) which rotate in bearings (18), secured to or formed integral with the vat.

The journals are provided with apertures (19) which form supports for the shower feed pipe (20), to which the shower pipe (21) is connected by means of the radially extending pipes (22) and the T-connections (23). One end (24) of the feed pipe extends through the bearing, and is held from rotation by means of lugs (25), formed in the vat extension (26). This end may be connected to a water supply (not shown), while the other end (27) extends into the hollow portion of the bearing, adjacent thereto, and may be supported by means of the bushing (28). This end (27) is plugged to prevent water from passing therethrough.

Communicating with the interior of the cylinder and formed in the vat walls are the discharge openings (30). One of the journals is provided with driving means, such as the pulley (31). A sealing medium, such as the stuffing box (32), may be placed around one of the journals to prevent the stock from escaping the vat.

The vat is provided with a baffle (33) which extends parallel to the screen, but at some distance from it. The baffle extends from side to side of the vat, but does not extend to the full depth, leaving a space (34). An inlet pipe (35) is provided in the end of the vat, near the baffle and remote from the screen, so that the stock may be delivered in such a manner that there is very little disturbance of the material in the vat.

Secured to the side of the vat is the float chamber (36), which communicates with the vat through the orifice (37) formed in the end of the vat. The float (38) is pivotally secured by means of a rod (39) to one end of a lever (40) pivotally mounted on a bearing (41) secured to the upper edge (42) of the vat. The other end (43) of the lever is secured to one end (44) of a connecting rod (45), the other end of which may be secured to a lever (46) which controls the valve (47) of the pipe line (48).

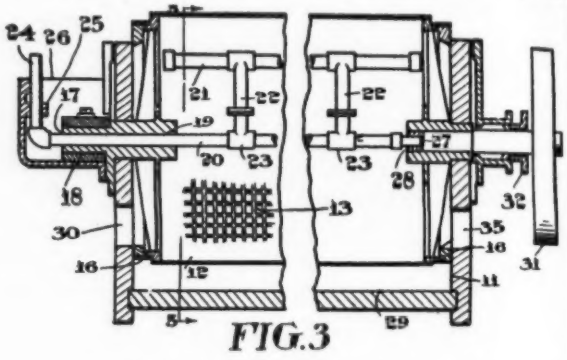


FIG. 3

Partial sectional side elevation on line 3—3 of Fig. 1.

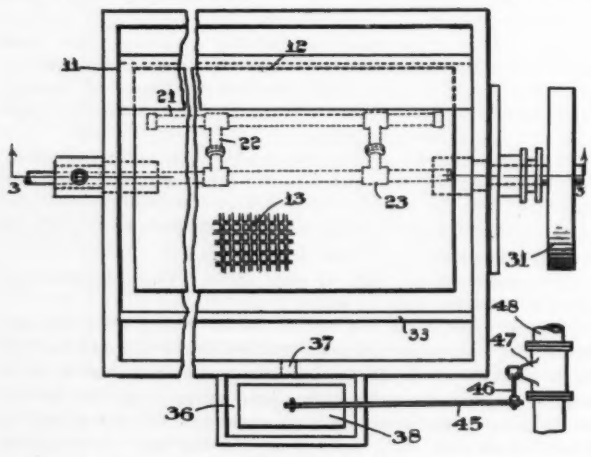


FIG. 1

Partial plan view.

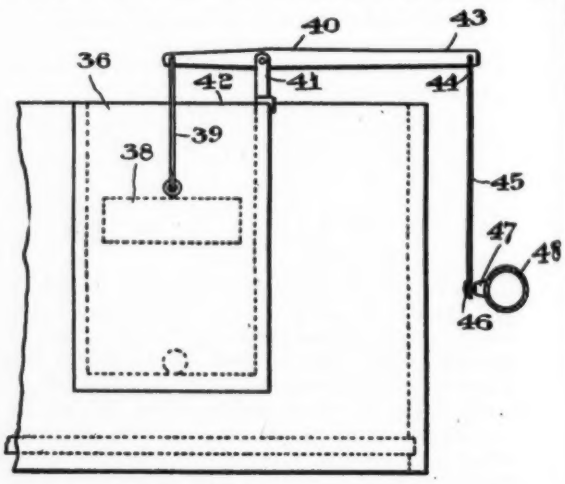


FIG. 2

Partial side elevation showing the float chamber and float.

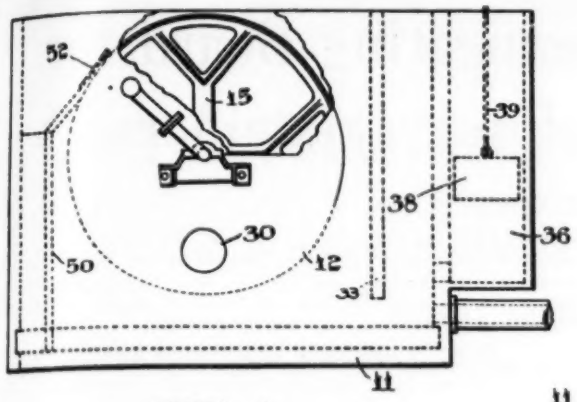


FIG.4

End elevation.

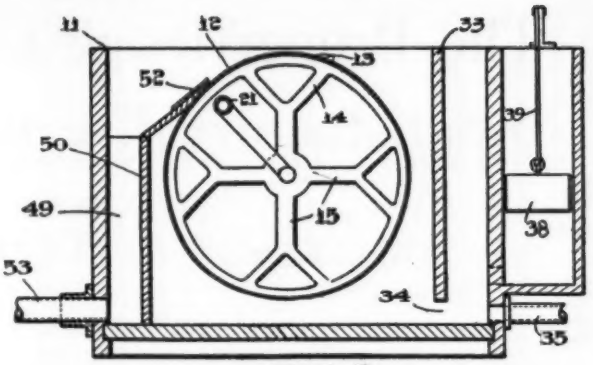


FIG.5

Sectional end elevation on line 5—5 of Fig. 3.

Formed in the end of the vat is the discharge chamber (49), and the end (50) of the vat is provided with a doctor (52), which contacts with the screen to remove the pulp adhering thereto and direct it into the discharge chamber which is provided with an outlet (53).

The shower pipe is provided with a number of perforations and is so mounted that it is substantially in alignment with the edge of the doctor, and close to it, but inside the cylinder. The fluid loosens the stock adhering to the face of the screen, so that the doctor will remove it and clean the screen during its rotation.

When the pipe line (48) is at some distance from the vat, a suitable form of electrical, pneumatic or hydraulic remote valve controlling means may be used.

### Operation

A relatively constant quantity of the stock to be regulated is fed into the machine through the inlet pipe, and the level of the stock in the vat builds up outside the cylinder due to the fact the liquid carrying the suspended stock must pass through the perforated or filtering wall of the cylinder and out of the vat discharge pipe. In passing through the screen a film of stock is deposited thereon in a more or less continuous web. The cylinder is rotated and the film removed by coming in contact with the doctor, assisted by the shower pipe, and the stock removed is allowed to run to waste or is returned to the source of supply.

The supply of stock fed into the vat is of relatively constant volume and if the fiber content is constant, the level of the stock in the vat will be constant; but if the proportion of fiber varies, the film on the screen also varies, and with it the level of liquid in the vat. The float in the float chamber is provided to regulate or correct this condition.

When the level of the liquid varies, the float rises and falls and is adapted to regulate the flow of water passing through the valve (47) in the pipe line (48), which may be connected to that part of the system (not shown) whence the stock in the vat is taken, or to a part of the system (not shown) which controls or feeds the above-mentioned part. It is readily seen that if the proportion of fiber falls, the film on the cylinder will be lighter, giving less hindrance to liquid getting through the screen, so that the level of the liquid in the vat will drop and will act on the float which in turn operates the valve (47) to cut down the supply of water to the system under regulation. If the stock supplied to the vat contains a higher proportion of fiber, the float rises and opens the valve to allow more water to be supplied to the system. —A. P., C.

# Progress Report on Chemical Tests for Paper*

By Helen U. Kiely [1]

The method for the determination of starch in paper has been revised to include Benedict's solution as well as Fehling's solution for the starch titration. Benedict's solution eliminates the outside indicator which is so troublesome when Fehling's solution is used. Experimental work was done comparing these two methods and the results were in such close agreement that the committee thinks it advisable to include both in their standard method.

### Estimating Paraffin

The method for estimating paraffin in paper has been written up and tests show that this method will give reliable results. It calls for extraction with carbon tetrachloride in paper unsized and, if sized, a further purification with alcoholic potash and ether.

Several tests were made in an effort to find a good method for small amounts of formaldehyde in paper. Philhastry's reagent or phenylhydrazine seemed to give the best results in our laboratory. This has been questioned by other chemists so possibly more work should be done upon this method.

The tentative method for acidity has been criticized in that the acid is not titrated in the presence of the fibers. A new method has been proposed where the paper is digested for a given length of time and the flask then cooled and swept out with $CO_2$ free air and titrated directly with NaOH using phenolphthalein as indicator. This method gives total acidity and has possibilities well worth consideration. Until more work has been done on this I believe it well to hold up on the publishing of the standard method for acidity.

### Copper Number

The committee feels that a standard method for the determination of copper number should be prepared. The two methods commonly used are the Braidy Method and the Bureau of Standards Method. There seems to be difficulty in obtaining check results using these methods although both should measure the same reducing power of cellulose.

### Paper Permanence

With work on permanency of paper under investigation, standard methods should be adopted. This also applies to the method of Alpha determination.

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* Presented at Annual Meeting of TAPPI, New York, Feb. 21, 1929.

[1] Member TAPPI; Chief Chemist, American Writing Paper Co., Holyoke, Mass.; Chairman, Sub-committee on Chemical Tests for Paper.

# The Properties of Corrugating Board for Satisfactory Use in Fiber Containers*

By Wilson W. Galloway [1]

### Well Made Rolls

The first requirement for successful corrugation in .009 straw board is a well wound roll. A roll that is soft will become flattened in shipment and will put a jerky pull on the corrugator as it revolves. This sometimes is so bad that the sheet is torn or snapped in two. Rolls should be hard, as free from splices as possible, and the edges should be even and firm. There are manufacturers who make an inferior grade of paper who find a ready sale because their rolls are first class. Care should also be exercised in packing them that the edges are not broken and the plugs should be the proper size and length to remain in the core until they are ready to be used.

### Stiffness

Having a good roll, the box maker expects to have a stiff sheet with which to work. A limber, raggy, soft sheet will not corrugate firmly, and one of the virtues of straw fiber properly prepared is the fact that it gives the sheet a stiffness without being brittle.

### Ability to Take Steam

While the straw sheet to be corrugated should be stiff, this quality is sometimes increased by hard calendering. This at times prevents the absorption of steam that is necessary at the time the corrugation is formed. The third quality, therefore, that is necessary in a corrugating sheet, is the ability to absorb steam. This difficulty varies with the equipment in use. Some of the machines running at high speeds are being equipped with a second steam spray so that both sides of the sheet are moistened in order that the bending may be accomplished perfectly. There are other mills where a slow corrugation is formed, that want a very spongy, lightly calendered sheet, so that the minimum amount of steam will be necessary. We have been in corrugating plants that ran slowly enough to do without steam entirely. As a rule, in these cases, the sheet could be calendered hard without difficulty. We believe the future will see more attention given to the application of steam on the corrugating machine and that the sheet to be corrugated will be specified with reference to finish.

### Tensile Strength

The sheet must have tensile strength. We have not seen any figures published where a definite value is given the Mullen test reading on straw for corrugating. Experience has shown us that we have no complaints on the quality, other things being equal, when the Mullen tests exceed 22. It is true that we have known satisfactory sheets to test below this figure. One of the problems of manufacture is to maintain sufficient body in the sheet at the low weights per thousand square feet, now demanded by the box maker, without reducing the tensile strength. There are lighter weight sheets of other materials that will read much higher on a Mullen tester that will not corrugate, but tensile strength to a certain degree seems necessary for a successful corrugation.

### Ability to Hold Silica

Since the corrugated sheet forms the center layer in the box, it must be of such a quality to hold the silica that glues the two outside covers to it. Length of fiber is necessary to produce this quality and there must be sufficient calendering either at the wet end or the dry end, or both, to give the fibers a cohesiveness so they will absorb the right amount of glue and yet hold together when the pull is put upon them. We know of no definite factors with which to measure this quality, but we do know that a spongy, brittle, sheet that has been scorched on the driers will break loose when glued, at the slightest strain.

### Ability to Bend in the Arch Without Cracking

The formation of the arch in the process of corrugating puts considerable strain on the straw. One of the most important qualities therefore, is that of bending and forming the arch without cracking. The proper amount of steam is an aid to the natural qualities of the sheet. If the fiber is too coarse, it will break instead of bending. If it is too short, it will do the same thing. There are mills making a short fiber sheet that produces a splendid arch, that is very stiff, while others of the longer fiber and more filler, are just as satisfactory.

### Proper Weight Per Thousand Square Feet

The straw sheet must be run with the proper weight per thousand square feet. This has been reduced from an average of 39 pounds in 1922 to a maximum of 34 pounds in 1929. Each year sees the corrugated box maker trying to get more square feet per pound for his dollar. We do not know where the end will be. Each reduction has produced the warning from those who are experienced in the manufacture of the boxes that the corrugated industry would certainly be wrecked by the lack of quality bound to follow. This does not seem to have been the result and with the coming of chestnut at 32 pounds or less, as a competitive product, the manufacturer of straw has been forced to again reduce his weight on January 1, 1929. Some attempts are being made to compensate for lack of weight by cooking with different chemicals than lime, or by adding chemicals in the beating process, the success of which is yet to be demonstrated to produce stiffness.

### Proper Moisture Content

The moisture content expected in the sheet to be corrugated if made of straw is 7 per cent. Various devices are on the market, by which these tests may be made accurately. It is the usual custom to sample each roll and to hold the moisture to very close limits.

### Proper Caliper

Caliper is still held at .009. These last two qualities, moisture and caliper, have not changed for a number of years. Now and then, a request comes for an .008 sheet which is usually used in running large orders of single face, instead of double face material for boxes. The single face material is largely used for wrapping fragile articles or those whose covers must be protected. The department stores are the largest consumers, and but a small amount of .008 straw is made, compared to the total of .009 board.

### Summary

The qualities necessary, therefore, in a sheet of straw to make it successful in its use, are:

1st—Well made rolls.
2nd—Stiffness.
3rd—Ability to take steam.
4th—Tensile strength.
5th—Ability to hold silica.
6th—Ability to bend in the arch without cracking.
7th—Proper weight per thousand square feet.
8th—Proper moisture content.
9th—Proper caliper.

* Presented at Annual Meeting of TAPPI, New York, Feb. 19, 1929.
[1] Member TAPPI; Manager and Treasurer, Hagar Straw Board and Paper Co., Cedarville, Ohio.

Section of the

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Edited by
THOS. J. BURKE, C. A., Sec.-Treas.

# Industrial Pensions and Wages*

By John Whitmore

It is my purpose here to consider briefly the subject of industrial pension systems in the United States and to consider the principles involved in them and the ultimate aspects of them as far as these are discernible. I shall consider the matter rather in relation to manufacturing industry than in relation to railroads and other public utilities; and as regards manufacturing industry, at least, I shall venture to suggest that pension systems, conceived to meet a need arising out of temporary industrial conditions, ought, as industrial conditions change in ways that are already indicated, gradually to cease. At present, as far as industrial pension systems in manufacturing industry exist, they undoubtedly, in their measure, which is by no means inconsiderable, meet very real needs; and this will inevitably be true for a long time to come. The question in regard to an old-age pension for a single worker involves a working-life history, and the completing of any radical change must be a matter of many years. It seems, in fact, very desirable that in the meantime industrial pension plans, formal or informal, should be generally adopted—for the reason that they correspond to the conditions that have existed through a large part of the lives of many workers whose old age is still to be provided for—but always with a view to their ultimate termination.

Important studies and criticisms of industrial pension systems have been published in rather close succession for some years past. Luther Conant Jr.'s *Critical Analysis of Industrial Pension systems* (Macmillan, 1922) is the earliest comprehensive work and is still of the greatest possible interest. The National Industrial Conference Board's *Industrial Pensions in the United States* (1925), partly because of its later publication, embraces in its study a still larger number of plans. The successive annual reports of the Carnegie Foundation for the Advancement of Teaching have for ten or more years past each included a critical survey of the year's progress in the matter. Of considerable interest are three articles written by Gurden Edwards, published in "The Annalist" of 1925, and reprinted by the Metropolitan Life Insurance Company under the title "Retirement plans in industry"; also the studies and proposals of the old-age pensions committee of the industrial-welfare department of the National Civic Federation (1925, 1926, 1927). In the present year there is a phamphlet published by the American Management Association under the title, "Pensions: a problem in management," which includes a paper by Edward S. Cowdrick and discussion by a number of industrialists and others with extensive pension experience. Finally, there is in progress of publication another comprehensive study by the Industrial Relations Counsellors, Inc., the preliminary report being dated May, 1928.

The first industrial pension system in the United States was inaugurated by the Baltimore & Ohio Railroad Company 1884. There are probably at the present time about three hundred formal pension systems in force in the United States. It is calculated that about $50,000,000 per annum is being paid to about 100,000 pensioners, and that of this about one half is being paid by the railroad companies to former employees. Public utilities other than railroads and financial institutions having pension plans total over one hundred; and manufacturing industries, according to the preliminary report of Industrial Relations Counsellors, Inc., one hundred and twenty-three, of which number are consolidations.

All industrial pension plans in the United States are in the same stream of development, and all have been treated, I think always, as parts of the same story. But I believe that, in the end, the problems they present must be considered separately, according to classes of industries.

Principally, the conditions are not the same in public utilities and in manufacturing concerns. The former, generally speaking, have greater permanency of existence, important in relation to the pension promise which from the time it begins to be in effect to its final fulfilment may spread over a period of fifty years. They have also probably something more nearly approaching general permanence of service, whereby a much larger proportion of the workers will fulfill a "length of service" requirement and so receive pensions. They have, I believe, in the last analysis, more fixed and limited standards of pay. Bonuses and profit-sharing, already existing and capable of great extension in manufacturing industry, are probably impracticable in public utilities, under government control and government regulation of rates that may be chargeable to the public. I am considering critically pension systems in manufacturing industry only.

While practically all writers on the subject of industrial pensions raise serious questions concerning the great majority of such systems, as to their social morality, as to their being ultimately practicable, as to their ever being effective at all on a sufficiently wide scale, it seems the fashion, especially of late, to take the need of pension systems for granted and to consider merely the advantages and disadvantages of different plans. This was not quite the position taken in the National Industrial Conference Board's work, nor in Luther Conant's

* (The Journal of Accountancy, March and April 1929.)

"Critical Analysis." The former says (p. 125), "It is not the purpose of this report to recommend or to discourage the establishment of pension plans in industry." The latter discusses more searchingly the economic and moral aspects of pension. Both give consideration and weight to the almost totally antagonistic attitude of organized labor.

Each of the two works just mentioned reviews the history of pension plans in the United States, and each contains an appendix classifying them. The *Critical Analysis,* published in 1922, lists 94 concerns having pension plans, and *Industrial Pensions in the United States,* published in 1925, lists 247 such concerns. About one fourth of the difference, apparently is due to the different years of publication. It will, I think, be well to take the later and more comprehensive list.

It is seen, as I have already noted, that the earliest formal industrial pension plan in the United States was inaugurated by the Baltimore & Ohio Railroad Company in 1884. There were, altogether, five such plans up to the year 1900. From 1901 to 1910, 44 were added; from 1911 to 1915, 73; from 1916 to 1920, 68; from 1921 to 1925, 40. The maximum for a five-year period was, then, from 1911 to 1915; after that the numbers fall. This has been attributed to unsettled post-war conditions and to a growing realization of ultimate costs. I am inclined to add rising wages as a probable important cause, for I can not doubt the relationship between the question of the adequacy of the immediate wages paid to labor, and the ultimate supplementing of wages by pensions.

Pension plans are classified primarily as non-contributory or contributory, the former meaning that the employee makes no money contribution to the scheme, and the latter that he contributes regularly out of his wages to the pension fund, in whatever form this may be.

Non-contributory pension plans are further classified as discretionary and limited-contractual. Contributory plans in manufacturing industry (with the slight exception of two or three fully contractual plans) are all limited-contractual. Discretionary plans are defined as "reserving to the employer the exclusive right to grant, withhold, reduce or terminate the allowance in individual cases, or to modify or abandon the plan altogether." Limited-contractual plans are discretionary during the working-life, but pensions once granted may not be changed. And if the plan is contributory the employee is entitled in any circumstances to the eventual return of his own contributions, either with or without interest.

It seems clear that "limited-contractual" often covers some further contractual features when the plan is contributory. The employer may undertake to contribute certain sums to a joint fund. The employees may participate in the administration. The plan may in these and other ways tend to a closer understanding and mutual engagement between employer and employees. But the conditions governing the employer's contributions and the employee's contributions are still so distinct that apparently there is not here a single plan, but two plans, namely a saving plan (the employee's contributions), and a limited-contractual pension undertaken by the employer. There is said to be a recent tendency to separate the funds, and to call the plans "co-operative" instead of "contributory."[1]

In any case, contributory plans are plainly a great advance upon non-contributory plans. The purpose is no longer merely an old-age pension for the worker himself. The benefits are no longer merely planned by others for him, but he is himself saving. The move is in the right direction. Its character is emphasized in the following quotation in the *Critical Analysis* from the seventh annual report of the Carnegie Foundation for the Advancement of Teaching:

> An officer of one of the large consolidations in manufacturing industry having a non-contributory discretionary plan, has, however, advanced the pertinent question whether it is not better to have savings plans "that will stand on their own feet, rather than to operate them under the guise of a pension plan." I shall discuss this question later on.

There are, then, these types of pension plans in manufacturing industry: discretionary and limited-contractual, and each of these either contributory or non-contributory, and a very few contractual plans. Of the 247 plans in all industries listed *in Industrial Pensions in the United States* in 1925, 171 were non-contributory and wholly discretionary with the employer; 43 were non-contributory and limited-contractual; 20 were contributory and limited-contractual; and the remaining 13 either contractual or of some special type, but few of these 13 were in manufacturing industry.

It is presumable that in every industrial concern that has had a fairly long existence, sufficient for employees to have spent a large part of their working lives in its service and to have grown old therein, there has come a time when the management has, without any pension plan, granted some individual pensions. As concerns grow larger, and as with the lapse of time present and prospective pensions increase in number, a formal plan apparently comes to be regarded as desirable. Probably the cost, present or prospective, comes to be seriously considered, and it is felt to be necessary to justify the expenditure on business grounds. A plan is formulated that aims to secure definite benefits to the employer in return for the pension expense. This seems to be the usual origin of industrial pension systems.

It was expected that the establishment of formal pension plans would create feelings of appreciation and increased attachment on the part of employees; that the prospect of a retirement pension would lift some anxiety from their minds; that as a result they would give more efficient service, and particularly long continuous service, reducing labor turnover. It is plain that these expectations have not been very generally fulfilled. In the later years more emphasis is placed upon the advantage of an established routine for retiring ageing employees when it is desirable in the interests of the business to do so.

Except for earlier disability, and possible special circumstances, pensions in practically all cases are dependent upon two conditions, age and length of service. *Industrial Pensions in the United States* (pages 72 and 78) contains tables of retirement ages fixed and length of service required in 118 plants. Compulsory retirement ages are from 60 to 70 for men, and from 55 to 70 for women. Length of service required (with negligible exceptions) ranges over 20, 25 and 30 years. Continuity of service is insisted upon in practically all plans. Subject to the right of employees under contributory plans (of which in 1925 there appear to have been not more than ten at the outside in manufacturing industry), all service credits are cancelled by resignation, discharge, or going out on strike. The right of the employer to discharge is kept intact.

*Industrial Pensions in the United States* says, "Nearly one half of all the plans studied fix an age limit for persons entering the employ of the concern for the first time...the age limit observed with by far the greatest frequency is 45 years."

The most serious questions relative to existing pension systems are concerned with their more obscure workings, and to some discussion of these I must come later. The plain conditions as affecting the employees are in the meantime, serious

[1] "In all contributory systems, experience has shown that eventually the contributors will demand four things: first, that if a contributor is dismissed or resigns voluntarily before the pensionable age, he shall be paid the amount of his total contributions, with interest; second, that if a contributor becomes disabled before the pensionable age, he shall receive either a full or proportionate pension; third, that if he dies before retirement, his estate shall receive the amount of his total contribution, with interest, or even the amount of both his and his employer's contributions, with interest; fourth, that if he retires upon a pension, but dies before the total amount of his pension receipts equals the amount of his total contribution, with interest, his estate shall receive the balance."

[1] Pensions: A Problem in Management, by Edward S. Cowdrick, American Managment Assn., 1928.

enough. Louis D. Brandeis (quoted in *Critical Analysis*, p. 45) speaks of them as tending "to rob the working man of his little remaining industrial liberty." This seems scarcely an exaggeration, although no moisture of his liberty is ostensibly taken away from him. He is placed in a position where perfect freedom of action can not be exercised without sacrifice. Pension systems are frankly arranged to create a penalty, which in many cases in any working force of ordinarily varying ages, must be very heavy, for going out on strike. The continuous service is broken and for many it is too late to begin again. But the hampering of the employee's freedom of action goes beyond this. He may wish to change his employment for many reasons; he may have the opportunity of securing higher wages or other better conditions elsewhere; and then he has to choose between sacrificing increased advantage in his working life and sacrificing his prospect of a retirement pension. And if he sacrifices other advantages for the prospect of a retirement pension, the latter is still uncertain. It is, in nearly all cases and at least throughout the working life, discretionary with the employer. The employee may through unforeseen causes be obliged to change his employment; he may be discharged; the employer may fail, or the company be merged with another company not willing to assume pension liabilities, as occurred when Morris & Company were merged with Armour & Company in 1922.

As regards the maximum hiring age, which apparently is an inevitable accompaniment of the pension based on fixed retirement age and length of service, and virtually of all private pension systems, it seems difficult to imagine anything more deplorable. Concerning, it, a recent writer* has said, "There is this seeming paradox: the very pension systems that are designed to support old age operate against the employment of men of advanced years, since employers who pay pensions naturally expect their workmen to render service for at least reasonably long periods before reaching retirement age." The principle is just the same as if pension systems and maximum hiring ages were universal, and the man over 45 was left with the simple choice between his present job and none at all.

If there is a good deal to be said against existing pension plans from the employee's side, it seems that the employers have reason to be seriously concerned about them. Their situation is indeed drawn in very dark colors. The first of the three articles, already alluded to, by Gurden Edwards in *The Annalist*, since republished by the Metropolitan Life Insurance Company, is entitled "Industrial pension plans collapsing." Perhaps this is an extreme view, but it is difficult to see that it is very different from the conclusions arrived at by all who have considered the matter carefully.

The *Critical Analysis* (p. 2) says, "Very few of the industrial pension plans in the United States today are so financed that they are likely to remain solvent without refinancing or modification."

*Industrial Pensions in the United States* (p. 101) says, "The great majority of pension plans in American industry have been established with no accurate calculation of their future costs and with no adequate provision for financing them."

The Carnegie Foundation annual report, 1926, quotes two authorities. First, Matthew Woll, vice-president of the American Federation of Labor and president of the Union Labor Life Insurance Company: "Five hundred industrial institutions, among them many of the strongest in the country, are piling up obligations which will, within a few years, require very large expenditure for which no provision is now being made." And second, the 1925 report of the Superintendent of Insurance, state of New York: "A large percentage of the existing pension systems were established on unsound bases. Bitter disappointment is in store for prospective beneficiaries under such unsound systems."

The simple fact appears to be that industrial concerns have gone into the business of deferred annuities under conditions involving risks which no insurance company would assume, and have done so in the great majority of cases without actuarial calculations of costs and without funding in due time the resources which with accumulations to the maturity of the obligations would suffice to meet them.

It seems very doubtful that even approximately accurate calculations are possible under the conditions of the great majority of existing plans. The pensions eventually payable depend upon labor turnover. Pensions are payable only to employees remaining with the concern until retirement age. The matter can not be foreseen. It is one aim of the pension plan to produce a different result from that in past experience. It aims to secure long continuous service. Next, the great majority of plans provide for a pension determined by multiplying a percentage of the average salary of the final 5 or 10 years by the years of service. The percentage is commonly 1, 1½ or 2. It is said that the wage level has risen in this country, from 1913 to 1928, 120 per cent. Pensions to be paid will therefore be something like double what might have been calculated for a plan established as long ago as 1913. Gradual adjustment would have been possible, but frequent revaluations of the accruing pension liability would have been necessary, and there is every indication that such frequent revaluations have been made in very few instances, if any.

Neither change in labor turnover, if indeed there has been any material change in this, nor change in wage level, which in the long run would come into relative adjustment, has, however, been the cause of the unsound condition, said to exist pretty generally, in industrial pension systems. The real troubles are lack of actuarial calculations and of funding; or in plainer words, ignorance of the long-continued increase and the ultimate annual burden of pension payments, *and neglect of the principle that the cost of pensions, as a part of the cost of labor, needs to be accrued, year by year, throughout the years in which the labor is performed.*

The way pension payments increase is illustrated in the first of the Gurden Edwards articles by three charts. The first assumes no growth in the payroll in the 30 years preceding the adoption of the pension plan. In the first year pensions commence for employees who entered the service 30 years before. Each year following the same number becomes eligible. Mortality, of course, gradually checks the accumulating numbers. The maximum is reached in 20 years and is then 12 times what it was in the first year of pension payments.

The second chart assumes an annual increase in employees of 10 per cent for 20 years, and then no further increase in the succeeding 10 years of the 30 years preceding the adoption of the pension plan. The maximum is reached in 34 years and is then 37 times what it was in the first year of pension payments.

The third chart is said to represent conditions in an actual and well-known manufacturing company. It is said that in this company pension payments, a few years after the installation of the plan, were becoming heavier than had been expected or provided for, and that an analysis of the situation revealed an inevitable burden which the company's finances could not support, and that abandonment of the pension plan was recognized to be imperative.

It seems plain that nothing but actuarial calculations can give any idea of the ultimate liabilities.

It is variously calculated, however, that from 1 per cent. (Gurden Edwards' second article) to 2 or 2½ per cent, (Critical Analysis, p. 150) upon current payrolls throughout the employees' service period, invested currently in interest-bearing securities, would yield reasonable pensions. These figures contemplate no withdrawal or death benefits; in other words, they take the full advantage of labor turnover and mortality. The actual pensioners, are, of course, relatively few.

The relation between the amount necessary, if funded year by

year throughout the working life, and the amount of the ultimate pension (considering individual cases singly) is shown in the Gurden Edwards articles by the following examples:

1—Salary $1,000. Employed at 25. Pensioned at 65.
1% x 40 years equals $400. Expectancy of life 11 years equals $4,400.
Reserve of $38.45 per annum throughout 40 years with 4% interest accumulations would provide for above.

2—Salary $1,000. Employed at 30. Pensioned at 65.
$500 pension for 15 years.
Reserve of $75 per annum throughout 35 years with 4% interest accumulations would provide for above as follows:

| | |
|---|---|
| Annual contributions | $2,625.00 |
| Interest—contrib. period | 3,168.00 |
| Interest—annuity period | 1,753.00 |
| | $7,546.00 |

But in addition to the actual financial difference, there is the accounting difference. If the necessary percentage of each year's payroll is funded immediately, it is an immediate charge completing the cost of the year's labor in the year's accounts. If no sufficient reserve is made currently, it is always left for future years to complete the payments in remuneration of this year's and every year's labor. The question has been raised, quite fairly it seems to me, whether the balance-sheet of a concern having a pension system in operation is correctly stated unless the accrued pension liability is stated with whatever accuracy is attainable. It has been estimated (though not in a manufacturing industry and therefore probably not with the benefit of the same labor turnover) that accrued pension liability may equal a year's payroll (*Critical Analysis*, p. 174).

Whatever the amount of the accrued pension liability at a given date, and assuming that the pensions are ultimately to be paid according to the plan, by that amount past production costs have been understated, and the future (except as some provision may have been made either by separate fund or reserve in the accounts) left to bear an expense for which it will be receiving no return.

*Industrial Pensions in the United States*: (p. 111) has a table, "Actuarial control and funding," which contains the following:

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|---|---|
| Plans reported as actuarial | 36 |
| Plans reported as Non-actuarial | 177 |
| Plans reported as funded | 85 |
| Plans reported as not funded | 136 |

"Reported as actuarial" might mean anything from some actuarial calculations to continuous actuarial control; and "reported as funded" would doubtless include all having any pension fund whatsoever.

The advent of insurance companies in the field of industrial pensions appears to date from the year 1922. Conant's *Critical Analysis* speaks of a single plan then recently effected through the instrumentality of an insurance company and says that in that year the two insurance companies giving chief attention to the subject were still working on the details of their contracts. It is spoken of as "a system of cumulative single premium annuities." It is described in the Critical Analysis (p. 111 as follows:

"Every worker who has completed a limited period of service with an establishment (say three to five years, roughly covering the period of initial heavy labor turnover) would, for each additional year, receive a paid up annuity policy assuring him of an income of, say, $10 per year, beginning at age of 65. There would be no condition attached to the issuance of a policy other than the completion of an additional year of service. The policy when once turned over to the worker would be absolutely his property and could not be forfeited."

And in Industrial Pensions in the United States (p. 58):

"It is a contributory arrangement by which the employee authorizes a stated proportion of his wage to be deducted and to be paid periodically, together with an additional contribution from the employer, to an insurance company. The latter issues to the employee at the end of each year a certificate which entitles him to draw an annuity, say, at age 65, equivalent to the income from the combined funds invested for his account during that year. Each year's contributions and certificate mark a completed transaction, and the benefits are cumulative. The employer is free, in case of necessity, to alter or discontinue the arrangement at the close of any year without detriment to the employee who is assured of the benefits already earned. The employee, on his part, is free to withdraw from the plan, or even from the service of the company, without forfeiting his equity up to date. In the event of withdrawal, even of dismissal, he has several options which may include the surrender of his certificates for cash. If he chooses to leave his investment intact, whether he continues his regular payments or not, he remains in possession of the policy paid for by the contributions already made by himself and by the employer on his account."

And, further:

"The theory underlying this automatic type of pension differs from the other contractual forms in that it does not presuppose a lifetime of service before pension benefits can be earned . . . It does not favor the use of a pension plan for binding the employee to the company irrespective of his conceived interests or inclinations."

This plan has been put into effect in probably quite a fair number of cases up to the present time, but apparently it has been fully adopted as described in the quotations above in very few indeed. The plan has received quite general praise from students of the pension problem, but not all employers are enthusiastic about it. Many are reluctant to let the administration of the pension scheme pass so completely out of their hands, believing that they thereby sacrifice a position of some advantage. In this connection it is interesting to note an opposite view. In the *Critical Analysis*, among the advantages of the single premium annuity plan, is included that "tangible evidence of the benefit is brought annually to the attention of the worker." In the next place probably many employers believe that the services of the insurance company would add materially to the cost. The contrary is maintained not unconvincingly by representatives of the insurance companies.* Much more important is the fact that nearly all employers object to contributing to pensions for employees who do not stay with them to retirement age. Consequently (except perhaps in a few cases) annual policies purchased by the employer's and the employees' contributions combined are not delivered to the latter unconditionally year by year. Matters are so arranged that if the employee withdraws from the service before retiring age, he gets the benefit of his own contributions, but not of the employer's contributions. It appears, therefore, that in most cases where the plan has been adopted it has been minus its essential principle, which is that "each year's contributions and certificate mark a completed transaction."

Some gains there are, however, and in themselves they are unquestionably very great. The plan is contractual, though on the condition that the employee remain in the service to retirement age. The provision for the pension is funded. The employer settles his full labor bill in each year, and so no present costs are deferred to be born by the future in unknown amounts, with all the illusions and dangers of such a condition.

On the other hand the employee's freedom is still hampered. If he changes his employment it is at the cost of the benefits accruing from all of his employer's contributions. He knows this and his employer knows it, and it must have an effect upon their relations with each other, upon the employee's sense of independence and quite possibly upon his fortunes in life. Instead of a completed transaction each year, there is here, as in the discre-

(* See paper by Reinhard A. Hohans, Jr., in Transactions Actuarial Society of America, Oct., 1925.)

tionary plans, the condition of long continuous service to retirement age.

And even if the plan were adopted in the otherwise almost perfect form outlined in the quotations above, it would still involve one evil, serious enough to be fatal. Nothing is said in the above outlines of the cumulative single premium annuity system concerning a maximum hiring age, but, avowed or unavowed, it will inevitably enter into the operation of every private pension system. The employer must consider economy of operation, and this will depend upon employee's entering the service early in life. If a full retirement pension is to be paid, it must, generally speaking, be paid in relation to full length of service; and if under the single premium annuity plan it is recognized that the employer's responsibility is only for actual years of service, many or few, the employer must as far as possible avoid bearing the higher premiums of the later years of a man's working life, unaveraged with the lower premiums of the earlier years.

Apart, however, from external and easily traceable effects, there are, as I have already said, questions as to the obscurer workings of industrial pension systems that are not to be ignored in any serious consideration of the subject.

The first question is whether the renumeration of labor will in the long run be any greater, because it is divided between immediate wages and a retirement pension, than it would be if there were immediate wages only.

There is in the *Critical Analysis* quotation of a saying that "industry, as a whole, is morally bound to provide the workers as a whole with sufficient income to meet not only present needs, but all the normal contingencies of life, including disability and old age."[2] This should be the minimum remuneration of labor, and under sound industrial conditions wages should not fall short of this standard. It is, however, unlikely that the worker will receive wages sufficient to enable him to provide for old age, and that his old age will be again provided for by a pension. There intervenes the standard of living of the time, for which no individual is responsible, which is one of the conditions of life which he must meet unless he is to have a sense of failure, and it is unlikely that the total remuneration of labor, in any form, will so outrun this that there will be any double provision for as material an item as the needs of the worker's old age.

One must believe that the economic and social forces in industry press toward the remuneration of labor at a level that is just, and it scarcely seems probable that the operation of such forces will be affected by the splitting up of such remuneration and paying it at different times and calling it by different names. It is fairly certain that what the workers receive as pensions they will not receive as wages. And there is this great difference, that wages are likely to be fairly distributed as earned, and pensions are not.

One or two quotations—and whoever cares to read the *Critical Analysis* will find many more of similar tenor. The president of the Carnegie Foundation for the Advancement of Teaching says in the 1918 annual report: "There is a fallacy concerning the free pension widespread and difficult to combat . . . The notion that in the free pension the beneficiary gets something for nothing is an illusion. There is no free pension where the questions of wages and pensions are involved together. In the course of a limited number of years such pensions will be adjusted to the salary or wage scale."

And Albert de Roode, *American Economic Review*, June, 1913: "A pension considered as part of the real wages of an employee is really paid by the employee, not perhaps in money but in the foregoing of an increase in wages which he might obtain except for the establishment of a pension system."

It is difficult to believe anything different. Pension costs may be borne (with minor modifications) in one of two ways: either immediately year by year as they accrue in respect of each year's services; or as they are paid after the services in respect of which they are paid have ceased. In the former case they are part of each year's current labor expense and will be fully considered by the employer as such. In the latter case, as has been shown, they must in time become a heavy burden and are then practically certain to affect even the wages it is possible to pay. In this connection it must be borne in mind that there is no pension system in manufacturing industry in the United States that has been in existence long enough for the expense to have approached its maximum. The full test in practice of the effect of pensions on wages lies in the future.

The second question as to the obscurer workings of pension systems, at least, or especially, as to non-contributory pensions, is whether they must not have an unfavorable effect upon the worker's qualities of thrift and self-reliance and self-respect. The question is stated repeatedly in the *Critical Analysis*: (page 3) "it is extremely difficult to determine the ultimate effects of such systems, not merely upon the worker's efficiency and his material well being, but even upon his character;" and (page 230) "the difference in the effect upon national character of having these workers thus virtually self-supporting in their old age," instead of objects of charity, or recipients of gratuities, can hardly be over-estimated." And on page 95 the author quotes the view "that any hope of old age relief from want which is not based upon individual thrift, economy, and foresight, decreases efficiency, independence, and manliness."

The same feeling is in the saying of Samuel Gompers that "where the workers receive an adequate wage they will provide their own pension system, and whatever men do for themselves increases their value as workers." And again in the Carnegie Foundation 1918 report "to lift from the shoulders of the individual a responsibility rightfully his, is to do him in the long run an injury."

The course of the argument running through the successive annual reports of the Carnegie Foundation is steadily in favor of contributory and contractual pension systems. It is against the free and discretionary system, the supposed gift, the uncertainty, the single aim of a retirement pension for the worker himself. But the strongest statement of the separate character of the workers contributions as savings is in one of these reports and has been quoted herein.

I have also referred to the question raised by the assistant to the president of the Bethlehem Steel Corporation in the discussion of Edward S. Cowdrick's[3] paper *"Pensions: a Problem of Management,"* and I quote it now as follows:

"I would like to raise the practical question as to whether it would not be more desirable to set up thrift plans that will stand on their own feet rather than to operate them under the guise of a pension plan. I think, if the thrift factor is the one that would justify all the lost work, so to speak, in making deductions under a contributory plan, then a thrift or stock plan, or some other form of savings plan which would have its own identity, would appeal to employees, particularly younger men, to a greater degree than if the savings feature were linked up to the pension plan."

All should save, there is no question about that. There remains to be sought the way of saving that will, first, have the strongest appeal from the very beginning of the working life; and, second, that will be most effective of all the purposes for which saving is imperative. The appeal of retirement pensions to the younger men in industry is admitted to be virtually nil. If it were otherwise I think it would indicate a very unyouthful outlook on life. Even if the younger men in industry could be induced to save by contributing to a retirement pension system I question whether it would not be one of the poorest forms of saving both morally and financially. What I think would be the best and would have the strongest appeal from the beginning of the working life, and what

[2] The Rev. John A. Ryan, D.D., director of the National Catholic Welfare Council.

[3] The reference here is to the cumulative single premium annuity system, as described by the author.

I think the employer's relation to employees' savings might be, I will try to state after I have stated the way in which I believe wages in manufacturing industry can be lifted to a point where there ought to be no need for employers to provide pensions, except for the older employees who have spent their working lives under the older conditions of wages not fully adequate for both present needs and all the normal contingencies of life.

I can scarcely imagine that anyone who has had any considerable experience in manufacturing operations, and who possesses in an ordinary measure the faculties of observation and reflection, doubts that all the workers, each and every one of them, have an influence upon the economy of manufacture. Individual skill, individual industry, observation, forethought, willingness to cooperate, willingness to impart knowledge, care to avoid waste, care for order, care for cleanliness: in one way or another, or in various ways, each worker can contribute something to the ultimate economy of manufacture. There are two ways in which their contributions to that end can be brought to something like a maximum; one is by educating them to a proper conception of their work and their mutual relationships, and of the possibilities that are in these, and the other is by giving them the opportunity to increase their wages as their work, individual and combined, lowers the cost of production.

There is one condition that is essential if the workers in manufacturing industry are to be educated or so to be paid proportionately to the results of their work. It is that their employers shall have knowledge of two things: first, what ought to be accomplished at each step in the operations, and second, and continuously, knowledge of what is accomplished. *And there is only one way by which such knowledge can be possessed, and that is by factory accounting through which standards of economy are developed and the actual operating results, step by step, and in their final outcome, measured by such standards.*

The principle has long been recognized, more it seems to me by practical men in manufacturing and by professional engineers than by accountants. But its application has, at least generally speaking, been elementary, because it is only by using the resources of accounting that it could be anything else. The simplest example of remunerating labor according to its exact results is the piece-work price. This involves a little accounting but not enough to need an accountant. The modern factory piece-work price is presumably always the result of recording the wages and the production of the individual, and so obtaining a unit labor-cost, and deducing a standard therefrom, and thence a piece price.

Another step is the premium system of wages. No longer a piece price, but an hourly wage rate and a standard of product and a premium for production in excess of the standard, so arranged that the larger the product the higher the labor remuneration per piece. The calculation of economy has now gone beyond mere labor costs. There are other costs as well as, or incident to, labor costs, and if these can be reduced something more per piece can be paid to labor and still the total cost per piece reduced. Accounting was needed for this, and engineers became amateur accountants—amateur inasmuch as I believe they neither know nor care about the principle of double-entry bookkeeping with its indispensable safeguard. The basis of the premium system of wages is the machine rate, or an expense rate, other than a machine rate, incident to productive labor. The machine rate is the result of calculating all the expenses of having and operating a machine for a given period, and dividing this into the calculated normal working hours. If by skill and industry the operator could reduce machine time, and so reduce the machine expense in the product, he could be paid a part of the saving in machine expense as a wages premium.

Again steam-plant engineers have calculated the value of the unit of steam and have inaugurated bonuses to steam-plant operators measured by the percentage of boiler efficiency.

And bonuses have been paid for furnace results in the metallurgical industries, but here, as indeed everywhere else, there are dangers of illusions unless there is double-entry accounting embracing the whole of the operations.

But while engineers and factory managers have felt their way in the application of the principles of establishing standards and measuring results thereby and paying labor accordingly, and have put these principles in force and what have seemed to them the crucial economic points of the operations in their charge, nothing, it seems to me, is more certain than that there is only one instrumentality by which this can be done systematically and completely from beginning to end of any manufacturing operations, and that instrumentality is double-entry factory accounting.

At some other time, if it seems worth while, I may try to describe the general processes of such double-entry factory accounting. At present, I must confine myself to saying that they should be such as to yield to a complete series of standards for all the expenses and efficiencies of the manufacturing processes, and to show continuously the variations in practice from the standards so established; and among the necessary uses of the information so obtained will be to impart the same knowledge to the working forces, and by bonuses to individuals, or groups, or to the working forces as a whole (these in the order of their desirability) to make the interest in high wages and the interest in economy of manufacture inseparably one.

In the compass of this article there is not room always duly to qualify. I do not, however, mean that standards of economy are produced through the work of accountants alone, for they are the results of the cooperation of all departments, technical and operating. Nor that the working forces are educated merely by communicating to them the results disclosed by the accounting, for that is a matter to be accomplished by diverse means. Nor that the only motive that will actuate the working forces to achieve a closer economy of manufacture is the prospect of increased wages. Better understanding of the costs and results of the manufacturing processes will go far in this direction. But the additions to wages are necessary to satisfy a sense of justice, and for the needs of the workers if these are understood, as they must be, to include provision for all the normal contingencies of life.

It is, however, said that, whatever wages are, a considerable proportion of industrial workers will arrive at ages at which they must retire, without having provided themselves with the means of living in their later years. The inadequacy of wages is, I believe, by plain implication of pension systems, and in fact, the primary cause of the need for old-age pensions; but the paying of adequate wages is believed to be by itself an insufficient remedy, because improvidence is a common human failing.

For this there is, doubtless, no perfect cure through any reform or adjustment of industrial relations. But improvement must be sought in ways that will not involve other evils even more serious. The ordinary man has many responsibilities to discharge before he reaches retirement age, and if his freedom and self-reliance are injured throughout his working life practical evils at least as great as old-age dependency will result. I think it is fairly plain that old-age pension systems must operate injuriously in some ways which are so serious that one might suspect that they are no effectual remedy for the one evil at which they aim. This is what proves to be the case if we forget all possible disadvantages and consider pension systems in relation to old-age dependency alone. Where is the hope, in any pension system, of pensions for more than a relative few of the great body of workers in manufacturing industry? And the few are those of steady disposition and even flow of life, who have happened to be both inclined and able to stay in one employ always. It is not easy to imagine that these have any very frequent identity with the hopelessly improvident. And for those who have had their share of the ordinary vicissitudes of life or even a normal share of the human restlessness or ambition that leads to change, where is there more than the rarest individual pension in all the plans I have reviewed?

If no cure, there is surely a way of progress. The first need

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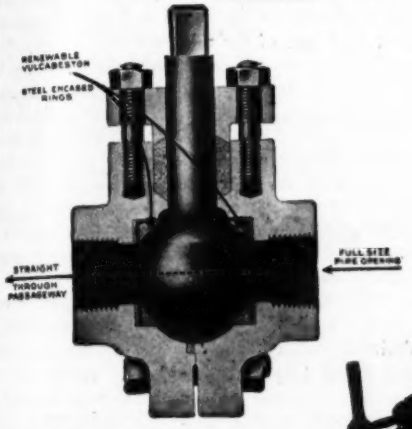

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is adequate wages. I have pointed out the way in which I am clear that these might come.

And beyond this there is the need of wise management in the personal finances of industrial workers. There is nothing in this that is peculiar to industrial workers, for it is just the same with all of us. It is one thing to earn money, and quite another so to use it thoughout our lives as to secure the utmost good. To imagine the latter it is necessary to imagine clear views of life from the beginning, and in addition no little business knowledge. Almost all of us acquire something of these but slowly.

It is a very interesting development in the more recent activities of some banking institutions that they are offering to their customers, especially to those of limited means, those to whom the fashion of their savings is of the greatest importance, advice and facilities and plans which aim to turn to the utmost account the savings that are possible in their circumstances. It would I think be difficult even to guess the good such institutions may accomplish by guarding such customers against losses, and by suiting savings plans to particular needs, and by bringing into the operation of the individual's money matters knowledge which the individual himself can but rarely possess.

It seems to me that the industrial employer is in an even more advantageous position to do a similar thing for his employees, if he should organize the means of doing it as he organizes his other business activities.

The employer would not do it for profit or to obtain a hold over his employee. He would at the outset have the advantage of the weight of his position and of practically complete disinterestedness. He could (the larger employers singly, the smaller in combination) command the same order of ability that banking institutions command, and place it at the service of the whole body of the employees. He could offer the employees, men and women, of all ages, with all their various responsibilities, the services of qualified counsellors in regard to all forms of insurance and savings, and systematized means of affecting the same over a period of time.

The greatest advantage is, of course, where the right influence and help and guidance are given at the beginning of the working life. There is nothing discouraging, I think rather the contrary, in the fact that the wrong appeal to the younger man in industry has completely failed.

How different the appeal if, while various savings and insurance plans were offered to employees at various ages and with various responsibilities, there were specially impressed upon young men the great advantages of ordinary life insurance effected when life insurance is at its cheapest. The young man is thinking little or nothing of his old age, but it is his natural expectation that he will marry and have children, and that the responsibilities so arising will be the great affair of his life, and that even very early they are likely to be serious responsibilities financially. Savings accumulate slowly, but at a single stroke he can insure his life for a substantial amount, because at his age premiums are very low. He secures protection and ultimate provision in a sum that would be quite out of his power otherwise, and even very early it is an immediate provision in case of necessity, because of the borrowing privilege in life-insurance policies. Throughout the years of paying premiums they are always so much smaller because the insurance was effected early. Because these payments are small, other kinds of savings may follow. From the beginning of his working life he is a kind of capitalist. He has established his first hold upon a sum that otherwise would exist for him only in distant and dim prospect.

And insurance and savings plans, so cooperated in by employer and employees, there is available the invaluable mechanism of the uniform routine deduction from wages. I know of one banking institution that, having arranged a savings plan for the individual customer, sends him a monthly bill for the amount he is to save. How much simpler and surer the employer's procedure of making regularly the agreed deduction from wages.

It is not my business, nor would this be the place, to suggest the many various ways in which savings might be arranged and managed for the greatest benefit of a body of employees. Of course, much of the kind is already done, but I am suggesting that, organized upon the right scale and conducted with the right skill and energy, not as a subordinate incidental and uniform scheme, but as a natural and vital part of the relations between employers and employees, adjusted to all varying conditions, it would accomplish far more good than pension systems, at least in manufacturing industry, and be free from all the evils, affecting both employer and employee, that seem inseparable from pension systems.

It is, therefore, through rising wages based on accounting measurements of economies in manufacturing, and through the maximum encouragement and the scientific management of savings, which it is quite within the power of industrial employers to offer the employees, that I believe the need for pension systems in manufacturing industry should gradually cease.

At best, however, the change in its fullness would require very many years, and in the meantime, as I said at the beginning, it seems not only desirable, but very necessary, that pension plans, formal or informal, should be generally adopted. The plan to be used would necessarily be a matter for consideration in view of all the particular circumstances in each case. There is much to be said for informal plans. They seems to make it possible to limit the pension expense, and still to deal more adequately with real needs. Among formal plans, the cumulative single premium annuity of transition from one set of wage conditions to another, for the reason that each year may mark a completed transaction, and the plan may be terminted at any time without effecting the annuities earned to date.

And inasmuch as some pensions are certain to be paid in any permanent business, and practically some plans must exist, even though quite informal and unannounced, it seems plainly of great importance that there should be forecastings of expense in every case, and the gradual accumulation of reserves. For this purpose, under any conditions, actuarial calculations are necessary. This is especially the case because there is always the question of accrued pension liability; that is, that part of the total pensions ultimately to be paid to workers now in the service that is to the total of the same pensions as their service from the beginning of their employment to date is to their total service from the beginning of their employment to their various retirement dates.

## Measurement of Paper Fibers

A recent cooperative test at the Bureau of Standards at Washington, D. C., with a manufacturer of rope-fiber papers is of interest as being indicative of the agreement that can be expected between different laboratories in the measurement of paper fibers. Two samples of paper, composed of 80 per cent rope fiber and 20 per cent sulphite wood fiber were tested. The length of the fibers was measured in the usual way, using a microscope equipped with a mechanical stage and a micrometer eyepiece. The results follow:

| | Bureau of Standards | | Manufacturer | |
|---|---|---|---|---|
| Rope Fibers | A | B | A | B |
| Sample | | | | |
| No. fibers measured | 150 | 150 | 200 | 200 |
| Av. length, mm. | 1.95 | 2.12 | 1.98 | 2.11 |
| Sulphite Wood Fibers | | | | |
| No. fibers measured | 35 | 58 | 50 | 50 |
| Av. length, mm. | 1.93 | 2.06 | 1.90 | 2.04 |

## May Move Board Plant To Salem

PORTLAND, Ore., May 31, 1929.—Prospects of a paper board plant at Salem, Ore., are seen for the near future, in the announcement that F. Puttaert of San Francisco, will bring his plant to the northern city if he receives sufficient support from local business interests.

The plant in San Francisco has been idle for some time, it is said, due to lack of raw material. At Salem the shives of flax straw from the state flax plant would be utilized, and this output is said to be more than sufficient to supply such a plant as the one mentioned.

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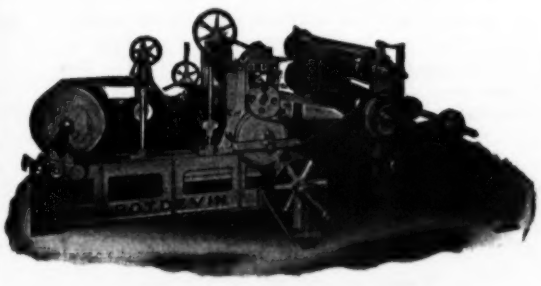

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# Imports of Paper and Paper Stock

## NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

## NEW YORK IMPORTS

WEEK ENDING JUNE 1, 1929

### SUMMARY

| | |
|---|---|
| Cigarette paper | 1628 cs. |
| Wall paper | 18 bls., 10 cs. |
| Paper hangings | 40 bls., 13 cs. |
| News print | 1992 rolls |
| Printing paper | 164 bls., 103 cs. |
| Wrapping paper | 13 bls., 46 cs. |
| Mould paper | 2 cs. |
| Silk paper | 2 cs. |
| Decalcomania paper | 46 cs. |
| Stencil paper and ink | 31 cs. |
| Baryta coated paper | 155 cs. |
| Surface coated paper | 105 cs. |
| Metal coated paper | 1 cs. |
| Metal paper | 15 cs. |
| Aluminum paper | 17 cs. |
| Colored paper | 37 cs. |
| Tissue paper | 96 cs. |
| Coated tissues | 3 cs. |
| Drawing paper | 3 cs. |
| Photo paper | 2 cs. |
| Filter paper | 229 bls., 15 cs. |
| Writing paper | 12 cs. |
| Straw board | 244 rolls |
| Miscellaneous paper | 339 cs. |

### CIGARETTE PAPER

P. J. Schweitzer, Pres. Monroe, Marseilles, 68 cs.

British American Tobacco Co., Majestic, Southampton, 7 cs.

British American Tobacco Co., Berengaria, Southampton, 67 cs.

Standard Products Corp., Ile de France, Havre, 43 cs.

De Manduit Paper Corp., Indep. Hall, St. Nazaire, 741 cs.

American Tobacco Co., Indep. Hall, Bordeaux, 702 cs.

### WALL PAPER

A. C. Dodman, Jr., Inc., America, Bremen, 4 bls.

R. F. Downing & Co., Belgenland, Antwerp, 4 cs.

F. J. Emmerich, Baltic, Liverpool, 4 bls.

A. C. Dodman, Jr., Inc., Baltic, Liverpool, 1 ble.

Schmidt & Pritchard, Deutschland, Hamburg, 1 ble.

M. Snedeker Corp., Deutschland, Hamburg, 1 ble.

F. J. Emmerich, Deutschland, Hamburg, 3 bls., 1 cs.

Phoenix Shipping Co., Deutschland, Hamburg, 3 bls.

Guaranty Trust Co., Deutschland, Hamburg, 1 ble.

A. C. Dodman, Jr., Inc., Majestic, Southampton, 2 cs.

A. W. Fenton, Inc., Majestic, Southampton, 1 cs.

J. E. Bernard & Co., Majestic, Southampton, 1 cs.

A. C. Dodman, Jr., Inc., Berengaria, Southampton, 1 cs.

S. H. Pomerance, Berengaria, Southampton, 1 cs.

### PAPER HANGINGS

W. H. S. Lloyd & Co., Baltic, Liverpool, 2 cs.

W. H. S. Lloyd & Co., Minnekahda, London, 39 bls., 11 cs.

A. C. Dodman, Jr., Inc., Carinthia, Liverpool, 1 ble.

### NEWS PRINT

Journal of Commerce, Innaren, Stockholm, 65 rolls.

——, Innaren, Stockholm, 444 rolls.

Parsons & Whittemore, Inc., Deutschland, Hamburg, 502 rolls.

Parsons & Whitemore, Inc., Dresden, Bremen, 916 rolls.

A. S. Zabriskie, Pres. Harding, Bremen, 65 rolls.

### PRINTING PAPER

E. Dietzgen & Co., Statendam, Rotterdam, 35 cs.

Perkins Goodwin & Co., Deutschland, Hamburg, 103 bls.

National City Bank, Deutschland, Hamburg, 61 bls.

E. Dietzgen & Co., Deutschland, Hamburg, 10 cs.

P. C. Zuhlke, Dresden, Bremen, 58 cs.

### WRAPPING PAPER

Birn & Wachenheim, Belgenland, Antwerp, 45 cs.

F. C. Strype, Belgenland, Antwerp, 1 cs.

C. Steiner, Deutschland, Hamburg, 13 bls.

### MOULD PAPER

Phoenix Shipping Co., Statendam, Rotterdam, 2 cs.

### SILK PAPER

Whiting & Patterson Co., Inc., Statendam, Rotterdam, 2 cs.

### DECALCOMANIA PAPER

L. A. Consmiller, Deutschland, Hamburg, 4 cs.

B. F. Drakenfeld & Co., Carinthia, Liverpool, 20 cs. (duplex), 22 cs. (simplex).

### STENCIL PAPER AND INK

Arlac Dry Stencil Co., Deutschland, Hamburg, 31 cs.

### BARYTA COATED PAPER

Globe Shipping Co., America, Bremen, 72 cs.

Globe Shipping Co., Dresden, Bremen, 83 cs.

### SURFACE COATED PAPER

Gevaert Co. of America, Belgenland, Antwerp, 92 cs.

Whiting & Patterson Co., Inc., Deutschland, Hamburg, 6 cs.

Phoenix Shipping Co., Deutschland, Hamburg, 6 cs.

P. C. Zuhlke, Dresden, Bremen, 1 cs.

### METAL COATED PAPER

Universal Car Loading Co., Deutschland, Hamburg, 1 cs.

### METAL PAPER

Hensel Bruckman & Lorbacher, Dresden, Bremen,

### ALUMINUM PAPER

Catty Foil Co., Belgenland, Antwerp, 17 cs. 15 cs.

### COLORED PAPER

S. Gilbert, Dresden, Bremen, 32 cs.

P. H. Petry & Co., Dresden, Bremen, 5 cs.

### TISSUE PAPER

P. J. Schweitzer, Pres. Monroe, Marseilles, 15 cs.

F. C. Strype, Pres. Monroe, Genoa, 4 cs.

Old Master Pulp & Paper Co., Deutschland, Hamburg, 60 cs.

F. C. Strype, Carinthia, Liverpool, 15 cs.

Meadows Wye & Co., Carinthia, Liverpool, 2 cs.

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G. W. Sheldon & Co., American Shipper, London, 3 cs.

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Keuffel & Esser, Lancastria, London, 3 cs.

### PHOTO PAPER

J. H. Schroeder Banking Corp., Dresden, Bremen, 1 cs.

Medo Photo-Supply Co., Minnekahda, London, 1 cs.

### FILTER PAPER

H. Reeve Angel & Co., Inc., Lancastria, London, 14 cs.

J. Wanamaker, Majestic, Southampton, 202 bls., 1 cs.

Orbis Products Trading Co., Indep. Hall, Bordeaux, 27 bls.

### WRITING PAPER

Jas. A. Hearn & Son, Ile de France, Havre, 5 cs.

Guibout freres, Ile de France, Havre, 5 cs.

Globe Shipping Co., Berengaria, Southampton, 2 cs.

### STRAW BOARD

A. Vuyk, Statendam, Rotterdam, 244 rolls.

### MISCELLANEOUS PAPER

Globe Shipping Co., Statendam, Rotterdam, 37 cs.

Hensel Bruckman & Lorbacher, Dresden, Bremen, 4 cs.

Mae & Hattie Green, Inc., Ile de France, Havre, 3 cs.

Standard Products Corp., Ile de France, Havre, 235 cs.

Chermay, Inc., Ile de France, Havre, 11 cs.

E. Dietzgen & Co., Yeifuku Maru, Hamburg, 49 cs.

### RAGS, BAGGINGS, ETC.

Fidelity Trust Co., Cabo Torres, Bilbao, 96 bls. rags.

American Rag Trading Co., Cabo Torres, Bilbao, 75 bls. rags.

W. Schall & Co., Cabo Torres, Bilbao, 131 bls. rags.

Harmon & Lichtenstein, Cabo Torres, Bilbao, 124 bls. rags.

E. J. Keller Co., Inc., Rigel, ——, 140 bls. rags.

S. Birkenstein & Son, Rigel, Genoa, 105 bls. rags.

Guaranty Trust Co., Rigel, Genoa, 88 bls. rags.

E. Butterworth & Co., Inc., Rigel, Genoa, 102 bls. bagging; 41 bls. cotton waste.

Irving Trust Co., Rigel, Genoa, 39 bls. cotton waste.

Goldman Sachs & Co., Rigel, Barcelona, 71 bls. rags.

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Van Oppen & Co., Statendam, Rotterdam, 21 bls. paper stock.

Equitable Trust Co., Artigas, Manchester, 220 bls. new cuttings; 32 bls. paper stock.

Madison State Bank, Artigas, Manchester, 111 bls. rags.

Irving Trust Co., Artigas, Manchester, 78 bls. paper stock.

R. M. Gray, Inc., Artigas, Manchester, 60 bls. paper stock.

Castle & Overton, Inc., Artigas, Manchester, 45 bls. bagging.

International Purchasing Co., Artigas, Manchester, 26 bls. bagging.

E. J. Keller Co., Inc., Artigas, ——, 68 bls. bagging.

National City Bank, Lalande, B. Ayres, 357 bls. bagging.

Gallagher & Ascher, Lancastria, London, 17 bls. rags.

National City Bank, Estonia, Danzig, 561 bls. rags.

E. Butterworth & Co., Inc., Baltic, Liverpool, 65 bls. rags.

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E. J. Keller Co., Inc., Ontario, ——, 97 bls. rags.

Merchants National Bank, Ontario, Havre, 56 bls. rags.

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B. D. Kaplan, Indep. Hall, Bordeaux, 3 bls. rags.

E. J. Keller Co., Inc., Exchange, ——, 41 bls. linen threads.

W. Loewenthal & Co., Yeifuku Maru, Hamburg, 9 bls. rags.

Kidder Peabody Accep. Corp., Yeifuku Maru, Hamburg, 200 bls. rags.

E. Mayer, Yeifuku Maru, Hamburg, 7 bls. rags.

Castle & Overton, Inc., Innoko, Antwerp, 39 bls. bagging; 55 bls. rags.

Royal Manfg. Co., Innoko, Antwerp, 31 bls. cotton waste.

Castle & Overton, Inc., London Merchant, Dundee, 6 bls. paper stock.

Anglo South American Trust Co., London Merchant, Dundee, 114 bls. paper stock.

Brown Bros. & Co., London Merchant, Dundee, 470 bls. paper stock.

Bank of The Manhattan Co., Kioto, Manchester, 55 bls. bagging.

Goschens & Cunliffe, Kioto, Manchester, 82 bls. bagging; 61 bls. new cuttings.

Flintkote Co., Kioto, Manchester, 122 bls. new cuttings.

D. I. Murphy, Pres. Harding, Bremen, 116 bls. bagging.

### OLD ROPE

Brown Bros. & Co., Cabo Torres, Bilbao, 89 coils.

Brown Bros. & Co., Alfonso XIII, Coruna, 30 bls.

E. J. Keller Co., Inc., Saco, ——, 63 bls.

Anglo South American Trust Co., Saco, Rotterdam, 66 bls.

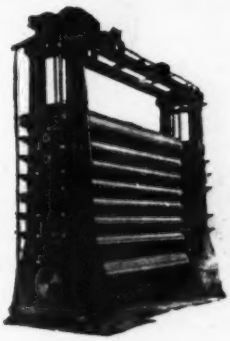
Brown Bros. & Co., Statendam, Rotterdam, 35 coils.

(Continued on page 80)

# LOBDELL

**Chilled Iron Calender and Press Rolls**
**Automatic Roll Grinding Machines**
**Improved Micrometer Roll Calipers**

**LOBDELL CAR WHEEL COMPANY**
*Established 1836*
**WILMINGTON, DELAWARE.**



## BROWN COMPANY'S ALPHA GRADES

of Purified Cellulose Fibre representing some of the valuable results of our many years of research in cellulose chemistry.

**SUPER ALPHA**

for strength in Tear, Fold and Mullen. Super Alpha equals the higher grades of rags in the manufacture of fine papers.

**EASY-BEATING ALPHA**

This is a grade developed for mills of limited beating capacity. While not giving results equal to Super Alpha, it produces wonderful paper on short beating.

**REGULAR ALPHA**

This is a grade midway between Super and Easy-Beating.

*Use ALPHA for Quality*

BROWN Company — FOUNDED 1852 — Portland, Maine

## THE CLARK-AIKEN CO.

**Successors to**
**H. C. Clark & Son Machine Co.**

**PAPER MILL MACHINERY**
**LEE, MASS.**

**Revolving Paper Cutters—Rag Cutters—Cylinder Paper Machines—Washing and Beating Engines—Chilled Iron and Paper Calenders—Fan and Stuff Pumps—Engine Roll Bars and Bed Plates—**
**Cylinder Molds—Marshall Drives—Slitters and Rewinders—Reels—Dryers with Improved Packing Boxes—Wet Machines—Gun Metal and Rubber Rolls—Rolls Reground.**

## Alertness and Operating Costs

FROM "force of habit" one may use from year to year the same equipment, belting for instance, without particular thought as to its bearing on either output or operating cost.

So it is of interest when an alert Management begins experimenting with **Rhoads Tannate Watershed Belting** and then follows the "try-outs" with belt after belt of Tannate, as did a large paper company with mills east and west.

They bought their first Tannate Belt for the Eastern mill in 1925, and for the Western in 1926. *Now they have many Tannate Belts;* and recently, within a 60-day period, installed eight 16-inch and 18-inch double Tannate Watershed Beater Belts.

When such careful and calculating Management invests so heavily in Tannate, it means more than good salesmanship. It is a very *concrete testimonial* of the unusual value of Tannate for paper mill drives.

May we send you one or more Tannate Watershed Belts to help reduce your costs and increase your profits?

**J. E. RHOADS & SONS**

**Philadelphia - 37 N. Sixth St.**

New York—104 Beekman St. Atlanta—70 Forsyth St., S. W.
Chicago—24 N. Clinton St. Cleveland—1224 W. Ninth St.
Factory and Tannery, Wilmington, Del.

# Imports of Paper and Paper Stock

(*Continued from page 78*)

Anglo South American Trust Co., Statendam, Rotterdam, 42 coils, 43 bls.

Banco Com'l Italiane Trust Co., Carnia, Naples, 66 bls.

Bank of The Manhattan Co., Carnia, Naples, 35 bls.

Brown Bros. & Co., Lancastria, London, 93 bls.

Chemical National Bank, Dresden, Bremen, 25 coils, 101 bls.

Brown Bros. & Co., Stavangerfjord, Oslo, 38 coils.

Brown Bros. & Co., Minnekahda, London, 57 coils.

V. Galaup, Indep. Hall, St. Nazaire, 73 bls.

International Purchasing Co., Exchange, Genoa, 211 coils.

Brown Bros. & Co., Carlier, Antwerp, 49 coils.

W. Steck & Co., Yeifuku Maru, Hamburg, 43 coils.

CASEIN

Casein Manfg. Co., Sud Argentino, B. Ayres, 312 bags.

National City Bank, Lalande, B. Ayres, 1803 bags.

Atterbury Bros., Inc., Lalande, B. Ayres, 834 bags.

T. M. Duche & Sons, Lalande, B. Ayres, 584 bags.

——, Lalande, B. Ayres, 1023 bags.

CHINA CLAY

J. Dixon Crucible Co., Deutschland, Hamburg, 400 bags.

WOOD PULP

Bulkley, Dunton & Co., Brosund, ——, 10,044 bls. wood pulp, 2,009 tons.

O. E. Kiaer, Innaren, Hango, 378 bls. wood pulp.

——, Innaren, Hango, 5,179 bls. sulphite.

——, Innaren, Hango, 1,530 bls. sulphate.

——, Innaren, Hango, 510 bls. wood pulp.

Price & Pierce, Ltd., Innaren, Gothenburg, 1,625 bls. wood pulp.

E. M. Sergeant & Co., Innaren, Gothenburg, 1,495 bls. dry soda pulp.

Woodpulp Service Corp., Innaren, Gothenburg, 125 bls. sulphite.

——, Deutschland, Hamburg, 438 bls. wood pulp.

Castle & Overton, Inc., Deutschland, Hamburg, 1,510 bls. wood pulp, 226 tons.

E. M. Sergeant & Co., Fred. VIII, Oslo, 150 bls. wood pulp, 25 tons.

Farmers Loan & Trust Co., Fred. VIII, Oslo, 800 bls. wood pulp, 100 tons.

Perkins Goodwin & Co., Stavangerfjord, Drammen, 125 bls. sulphite.

Perkins Goodwin & Co., Stavangerfjord, Oslo, 150 bls. chemical pulp.

Atterbury Bros., Inc., Stavangerfjord, Oslo, 250 bls. wood pulp.

E. J. Keller Co., Inc., Yeifuku Maru, ——, 688 bls. wood pulp, 104 tons.

WOOD PULP BOARDS

Lagerloef Trading Co., Innaren, Hango, 417 rolls.

WOOD FLOUR

B. L. Soberski, Statendam, Rotterdam, 2,200 bags.

State Chemical Co., Statendam, Rotterdam, 820 bags.

## BALTIMORE IMPORTS

WEEK ENDING JUNE 1, 1929

S. Shapiro & Son, Ontario, Havre, 43 bls. rags.

Congoleum Nairn Co., Indep. Hall, St. Nazaire, 143 bls. rags.

Katzenstein & Keene, Inc., Indep. Hall, St. Nazaire, 48 bls. rags.

National City Bank, Indep. Hall, Bordeaux, 408 bls. rags.

Congoleum Nairn Co., Indep. Hall, Bordeaux, 701 bls. rags.

Katzenstein & Keene, Inc., Indep. Hall, Bordeaux, 124 bls. rags.

Congoleum Nairn Co., Innoko, Antwerp, 1,493 bls. rags.

S. Shapiro & Son, Innoko, Antwerp, 33 bls. rags.

W. H. Masson, Innoko, Antwerp, 72 bls. old rope.

## NORFOLK IMPORTS

WEEK ENDING JUNE 1, 1929

Citizens National Bank, Artigas, Manchester, 100 bls. bagging.

Atlantic Jute Mills, Artigas, Manchester, 43 bls. bagging.

E. Butterworth & Co., Inc., Innoko, Antwerp, 114 bls. bagging.

## PHILADELPHIA IMPORTS

WEEK ENDING JUNE 1, 1929

E. J. Keller Co., Inc., Rigel, ——, 140 bls. rags.

Philadelphia National Bank, Rigel, Barcelona, 97 bls. rags.

Bank of The Manhattan Co., Carnia, Naples, 144 bls. rags.

Bank of New York, Carnia, Genoa, 35 bls. fustians.

Union Bank & Trust Co., Ontario, Dunkirk, 90 bls. rags.

National Bank of Commerce, Ontario, Havre, 410 bls. rags.

Royal Manfg. Co., Ontario, Havre, 41 bls. cotton waste.

E. J. Keller Co., Inc., Ontario, 109 bls. rags.

Katzenstein & Keene, Inc., Indep. Hall, St. Nazaire, 226 bls. rags.

D. I. Murphy, Indep. Hall, St. Nazaire, 103 bls. rags.

Castle & Overton, Inc., Indep. Hall, St. Nazaire, 256 bls. rags.

P. Berlowitz, Indep. Hall, St. Nazaire, 367 bls. rags.

E. J. Keller Co., Inc., Indep. Hall, ——, 184 bls. rags.

Castle & Overton, Inc., Indep. Hall, Bordeaux, 491 bls. rags.

Katzenstein & Keene, Inc., Indep. Hall, Bordeaux, 177 bls. rags.

D. I. Murphy, Indep. Hall, Bordeaux, 511 bls. rags.

V. Galaup, Indep. Hall, Bordeaux, 37 bls. rags.

Southwark National Bank, Exchange, Leghorn, 29 bls. rags.

E. J. Keller Co., Inc., Sacandaga, ——, 66 bls. rags.

E. J. Keller Co., Inc., Binnendyk, ——, 92 bls. rags.

E. J. Keller Co., Inc., Hagen, ——, 352 bls. wood pulp.

E. J. Keller Co., Inc., Savoia, ——, 151 bls. rags.

## BOSTON IMPORTS

WEEK ENDING JUNE 1, 1929

J. B. Moors & Co., Mississippi, London, 142 bls. rags.

Brown Bros. & Co., Mississippi, London, 77 bls. old rope.

Baring Bros. & Co., Mississippi, London, 288 bls. waste paper.

H. O. Houghton & Co., Mississippi, London, 45 cs. paper.

Philadelphia National Bank, Mississippi, London, 57 bls. rags.

G. M. Graves Co., Mississippi, London, 159 bls. rags.

Crocker Burbank Co., Mississippi, London, 776 bls. waste paper.

J. Andersen & Co., Brosund, Soderhamn, 1,750 bls. sulphate.

Bulkley Dunton & Co., Brosund, ——, 7,181 bls. wood pulp.

Scandinavian Pulp Agency, Inc., Innaren, Gothenburg, 2,710 bls. kraft pulp; 1,778 bls. sulphite.

Johanson Wales & Sparre, Inc., Innaren, Gothenburg, 200 bls. sulphate.

Parsons & Whittemore, Inc., Innaren, Gothenburg, 600 bls. sulphite.

Scandinavian Pulp Agency, Inc., Innaren, Stockholm, 2,800 bls. chemical pulp.

——, Innaren, Stockholm, 240 bls. sulphite.

J. Andersen & Co., Innaren, Stockholm, 285 bls. sulphite.

——, Innaren, Helsingfors, 2,770 bls. sulphite.

Lagerloef Trading Co., Innaren, Helsingfors, 175 bls. wood pulp boards.

G. F. Malcolm Co., Carinthia, Liverpool, 28 cs. carbonizing tissue.

Brown Bros. & Co., Exchange, Marseilles, 51 coils old rope.

E. J. Keller Co., Inc., J. L. Luckenbach, ——, 400 bls. bagging.

## To Open Paper Branch at Mobile

MOBILE, Ala., June 3, 1929.—The new industries department of the Chamber of Commerce announces that Mobile is to have a new wholesale paper distributing firm in the near future, opening about July 15.

For several days, C. H. McGehee, of the Jacksonville Paper company has been in Mobile making arrangements for the new distributing house, which will be a branch of the Jacksonville company, and has been assisted by Manager R. D. Hays, of the new industries department.

Mr. McGehee says that he is favorably impressed with the opportunities for interior distribution which the rail and barge lines entering this port afford, in Alabama, Mississippi and west Florida. His company has headquarters at Jacksonville, Fla., and branches in Miami, Tampa and West Palm Beach.

## Rice, Barton & Fales To Furnish Machine

HOLYOKE, Mass., June 4, 1929.—The contract for the new cylinder paper machine for the Chemical Paper Manufacturing Company has been let to the Rice, Barton & Fales Company, Inc., of Worcester. This concern will also rebuild the present No. 4 cylinder machine. The company has had great growth in its card board business of late and is in need of the extra machine right now. This is one of the first of a series of contracts in the $500,000 development plans of the company.

## American Instrument Co. Changes Quarters

WASHINGTON, D. C., June 4, 1929.—The American Instrument Company announces the removal of its offices from 1218 D street, N. W., to 774 Gerard street, N. W., Washington, D. C.

*The*

# ST. REGIS PAPER COMPANY

**Daily Capacity**
**525 TONS**

**Newsprint**
**Catalog and Directory Papers**
**Fibre Wrapping Papers**
**Packers Oiled Manila**
**Specialties**

*General Sales Office*

**15 Broad St., New York**

**Farmers' Bank Bldg.**
**Pittsburgh, Pa.**

GOOD RAGS FOR PAPER MILLS NEW CUTTINGS

## The Leshner Paper Stock Co.

INCORPORATED

HAMILTON, OHIO
*BRANCH*—CINCINNATI, OHIO

**Power for Beaters**

This illustrates an unique application of a Morse Silent Chain for driving two beaters. They are 140 H. P. drives operating on 84 inch centers. Driver 480 r.p.m.; Driven 145 r.p.m.
Specify Morse Drives for efficient, dependable power transmission.

**MORSE CHAIN CO., Ithaca, N. Y., U.S.A.**

*Branches in Principal Cities*

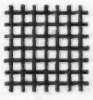
**Fourdrinier Wires, all widths up to 300 inches**

DIMOND WIRES

**NEUMEYER & DIMOND**
*Established 1904*
**82-92 Beaver St. New York**

## FOURDRINIER WIRES

*In brass, bronze and phosphor bronze, widths up to and including 250 inches.*



*Also*
CYLINDER FACES
WASHER WIRES
and CORDUROY CLOTH

THE W. S. TYLER COMPANY
Cleveland, Ohio, U. S. A.

## New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, June 5, 1929.

Conditions in the local paper market were fairly satisfactory during the past week. Demand for the various standard grades was well up to the average for the season. Production of all grades is slightly ahead of last year's output, while stocks in hand are less than at this time in 1928. Prices are holding a schedule, in most instances. Sales forces of the leading paper organizations are still booking some good orders, and no decided slump in business has been experienced so far.

The news print market it exhibiting a strong undertone. Statistics gathered by the News Print Service Bureau show that production is being maintained at approximately 85 per cent of capacity in the United States and Canada, while shipments are averaging 86 per cent of rating. The future outlook for the industry is much brighter now that prices are stabilized and the output is being keyed to current requirements.

Production of the various grades of paper board is slightly higher than of late, although accumulations have increased. The prices situation is still unsatisfactory. Some improvement was noticed in the fine paper market, with prices steady to firm. Tissues are moving in good volume for the season. The coarse paper market is rather quiet at present. Wrapping paper is going forward in a routine manner.

### Mechanical Pulp

Steadiness continues to prevail in the ground wood market. Demand for both domestic and imported mechanical pulp is persistent, and supplies are moving into consumption in good volume for the time of year. Spot offerings are limited, and prices are generally holding to previously quoted levels. There is little talk of concessions around at present, and the outlook for the industry is promising.

### Chemical Pulp

The chemical pulp market is in a sound position. Strong unbleached sulphite is still very firm, with demand heavy, and offerings decidedly limited. Both domestic and imported bleached sulphite continue steady. Soda pulp is in excellent request, and as stocks on hand are lower than a year ago, this grade is displaying great buoyancy. Other grades of chemical pulp remain steady and unchanged.

### Old Rope and Bagging

Active conditions prevail in old rope market. Demand for both domestic and imported manila rope is persistent, and with offerings rather scarce, the recently advanced quotations are being maintained without difficulty. No radical changes were recorded in the bagging market. Roofing bagging is moderately busy. Scrap and gunny continue fairly steady. Prices generally remain unaltered.

### Rags

The domestic rag market is displaying satisfactory strength. Cotton cuttings are moving into consumption in good volume. Roofing grades are fairly active. Prices are generally holding to previously quoted levels. Paper mill interest in foreign rags shows some signs of improvement, although dealers abroad are still asking high prices, due to heavy home demands.

### Waste Paper

While the paper stock market was rather quiet during the past week, the lower grades were in excellent request from the board mills. Strictly folded news was especially active and is now quoted at from 57½ cents to 62½ cents. Mixed paper was also in excellent demand. Old kraft machine compressed bales are moving freely. Interest in soft white shavings is well sustained. Book stock was only moderately active.

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### Counties Informed On Reforestation Law

The supervisors of all the counties in the State of New York have been mailed a folder explaining the Hewitt laws relative to reforestation.

The New York State College of Forestry of Syracuse University has placed this information in the hands of the supervisors in order to familiarize them with the law and the opportunities for assistance that may be obtained from the cooperative service offered by the Forestry College. This communication is in the form of a six-page folder upon which the law is printed verbatim followed by a brief explanation of what its provisions mean to the county in the reclamation of idle land.

The opportunity offered to counties by the new Hewitt law is exceptional in the reforestation movement in this country inasmuch as the State duplicates any amount of money up to $5,000 appropriated by counties for the purpose of planting trees on idle lands and at the same time provides trees for planting free of cost except transportation charges.

This aid by the State to the counties in putting idle land to work through reforestation, protecting stream flow, guarding highways from washouts and bridges from destruction and providing for forest recreation is an opportunity in public welfare work of which the College believes few counties will fail to take advantage.

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### Notes of the Boston Trade

BOSTON, MASS., June 3, 1929.—Edward A Morton, assistant treasurer of the Andrews Paper Company, celebrated the twenty-fifth anniversary of his connection with the firm on Saturday, June 1. His associates took the occasion to present him with a beautiful basket of flowers and a wrist watch, suitably engraved. Mr. Morton started with the concern as office boy when it was Higgins Snow Company. He rose from office boy to book-keeper, credit manager and assistant treasurer.

The McQuillen Associates, of Storrs & Bemet Company named for W. F. McQuillen, the first honorary president of the organization, enjoyed an outing Saturday, June 1, at Lake Pearl, Wrentham, Mass., and later a dinner at Webber Duck Inn. About 80, including members of the firm, were present. The committee of arrangements was composed of Charles Tully, chairman, Robert Chapman, Maxwell H. Robson, Walter Duncan, Sandys Clyde and Misses Rose Camuso and Anne Mackenzie.

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### Norwegian Paper Exports Decrease

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 5, 1929.—Exports of paper from Norway to the South American countries in 1928 compared with the preceding year show a decrease from 32,944 metric tons to 26,016 metric tons, according to a report from R. Dunker, at Oslo. The heaviest decline occurred in shipments to Argentine which declined from 14,563 to 8,763 tons. Exports to other South American countries altogether fell off only about 1,000 tons.

**FREDERICK L. SMITH**
21 EAST 40TH STREET, NEW YORK
**PULP AND PAPER MILL ENGINEER**

**B. M. BAXTER & CO.**
Engineering Service for Paper Mills
PULP PAPER BOXBOARD POWER
GRAND RAPIDS, MICH.
400 Lindquist Bldg.

**UNITED STATES TESTING COMPANY, Inc.**
316 Hudson Street, New York City
PAPER: Microscopical, physical and chemical tests. Complete laboratories. Constant standard conditions.
WOODPULP: Sampling, weighing, and moisture determinations by own staff at New York and Philadelphia. Special arrangements for other ports.
*Approved chemists to American Paper and Pulp Association and American Association of Woodpulp Importers.*

**Appleton Wires**
are good wires
APPLETON WIRE WORKS INC., APPLETON, WIS.

**Stebbins Engineering & Mfg. Co.**
Chemical Pulp Mill Engineers
WATERTOWN, N. Y.
*Digester, Acid Proof and other Guaranteed Linings* *Bleaching Systems*

ask us
THE PUSEY AND JONES CORPORATION
*Established 1848. Builders of Paper-making Machinery*
[NEWS-PRINT BOOK PAPER KRAFT BOARD]
*Wilmington, Delaware, U.S.A.*

**WYCKOFF WOOD PIPE**
The Paper Industry is successfully using thousands of feet of this Pipe and they find it to be the best conveyance for White Water, Paper Stock and Acids that can be obtained.
Pressure Pipe That Never Bursts.
Built in sizes 1 inch to 48 inches.
A. Wyckoff & Son Company
1855 Elmira, N. Y., U. S. A. 1929

**A. J. BRADLEY MFG. COMPANY**
Oiled Stencil Board
Lamp Shade Parchment
IN A VARIETY OF GRADES AND COLORS
101 BEEKMAN STREET NEW YORK

**KELLOGG**
Forge and Hammer Lap Welded
**DIGESTERS**
Power Plant Piping..Forge Welded Pipe..Boiler Drums..
Headers..Receivers..Separators..Flanged
Joints..Autoclaves
The M. W. KELLOGG Co., 225 BROADWAY, N. Y. C.
Boston Birmingham Chicago Pittsburgh Los Angeles
*All Kellogg Forge and Hammer Welded Products are insurable*

**JAMES W. SEWALL**
Consulting Forester
OLD TOWN MAINE

**D. MANSON SUTHERLAND, Jr.**
*Consulting Chemical Engineer*
Broad Street Bank Building, Trenton, N. J. — 341 Madison Ave., New York
SPECIAL FIBRE PRODUCTS AND PROCESSES — WATERPROOFING COMPOSITIONS
HOMOGENEOUS BOARDS, FORMING AND DRYING MACHINES
PURIFICATION OF EFFLUENTS — UTILIZATION OF WASTE FIBRES

**PAPER TESTS**
In Accordance with T. A. P. P. I.
Standard Methods
Oils — Paper — Water — Microphotograph
Electrical, Mechanical, Physical, Chemical and Photometric Tests
ELECTRICAL TESTING LABORATORIES
80th St. & East End Ave., New York

***Bailey Meter Company***
*1056 Ivanhoe Road, Cleveland, Ohio*
*Specializing in*
*Power Plant Metering Equipment*

**GATTI PAPER STOCK CORPORATION**
41 East 42nd St., New York
Paper and Woolen Mfrs.' Supplies
COTTON AND WOOLEN WASTE
Warehouse—Hoboken, N. J. Branch office—Holyoke, Mass.

**KARL A. LEFREN, Inc.**
CONSULTING ENGINEERS
171 Madison Ave. New York City

# Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, June 5, 1929.

BLANC FIXE.—Conditions in the blanc fixe market are practically unchanged. Both the pulp and the powder are in seasonal request. The pulp is still quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is selling at from 3¼ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Demand for bleaching powder was mostly along routine lines during the past week. Contract shipments were well up to average. Prices are generally holding to previous levels, without difficulty. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in large drums, at works.

CASEIN.—The position of the casein market is unchanged. Domestic casein is quoted at from 16 cents to 17 cents per pound, while standard ground imported is selling at from 15½ cents to 16 cents per pound, and finely ground at from 16½ cents to 17 cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—While the caustic soda market was rather quiet, the contract movement was well sustained. Prices remain unchanged. Solid caustic soda is quoted at from $2.90 to $2.95, while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market was moderately active. Supplies are moving into consumption in satisfactory volume. Prices remain unchanged. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—No radical changes have been recorded in the chlorine market of late. Contract shipments are going forward at an excellent pace. Chlorine is quoted at 3 cents per pound, in tanks, or multi-unit cars, at works, on standard contracts. The spot quotation ranges from 3¼ cents to 3½ cents per pound.

ROSIN.—The rosin market was rather quiet. Prices were easier. The grades of gum rosin used in the paper mills are now quoted at from $8.10 to $8.45 per 280 pounds, in barrels, ex dock. Wood rosin is selling at from $6.50 to $7.30 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Steadiness prevails in the salt cake market. News that this product had been restored to the free list was welcomed by the manufacturers of kraft paper. Prices rule firm. Salt cake is quoted at from $16 to $18 per ton, while chrome salt cake is selling at from $14 to $15 per ton, in bulk, at works.

SODA ASH.—The soda ash market is exhibiting a strong undertone. Contract shipments are moving in good volume. Prices are holding to schedule without difficulty. Contract quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bags, $1.32½; and in barrels, $1.55.

STARCH.—Demand for starch from the mills is fairly persistent. Supplies are moving into consumption in a normal manner for the season. Prices remain unchanged and there is little talk of concessions around. Special paper making starch is still quoted at $3.82 per 100 pounds, in bags, and at $3.99, in barrels.

SULPHATE OF ALUMINA.—The sulphate of alumina market is in a satisfactory position. Shipments against contract are going forward at a good pace. Prices remain unchanged. Commercial grades are quoted at from $1.40 to $1.55 and iron free at from $1.95 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—Production of sulphur is being maintained in sufficient volume to take care of current requirements. Sulphur is quoted at $18 per ton, in lots of 1,000 tons, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and nearby car loads, the quotation is $21 per ton.

TALC.—The talc market is practically unchanged. Demand is moderately active and the contract movement is well up to average. Prices remain unaltered. Domestic talc is quoted at from $16 to $18 per ton, at eastern mines, while imported talc is selling at from $18 to $20 per ton, ship side.

# Market Quotations

## Paper

(F. o. b. Mill)

| | | |
|---|---|---|
| Ledgers | 11.00 | @38.00 |
| Bonds | 9.00 | @45.00 |
| **Writings—** | | |
| Extra Superfine | 14.00 | @32.00 |
| Superfine | 14.00 | @32.00 |
| Tub sized | 10.00 | @15.00 |
| Engine sized | 8.00 | @11.00 |
| **Book, Cased—** | | |
| S. & S. C. | 6.00 @ | 7.50 |
| M. F. | 5.75 @ | 7.00 |
| Coated and Enamel | 7.50 | @12.00 |
| Lithograph | 7.50 | @12.00 |
| **Tissues—Per Ream—** | | |
| White No. 1 | .75 @ | 1.00 |
| Anti-Tarnish | 1.35 @ | 1.90 |
| Colored | 1.00 @ | 2.00 |
| White No. 2 | .75 @ | .80 |
| Kraft | 1.00 @ | 1.10 |
| Manila | .75 @ | .80 |
| **Kraft—** | | |
| No. 1 Domestic | 6.25 @ | 6.50 |
| No. 2 Domestic | 5.25 @ | 5.50 |
| Southern | 4.25 @ | 4.50 |
| Imported | 6.50 @ | 7.00 |
| **Manila—** | | |
| No. 1 Jute | 9.00 @ | 9.25 |
| No. 2 Jute | 7.75 @ | 8.50 |
| No. 1 Wood | 4.75 @ | 5.25 |
| No. 2 Wood | 4.00 @ | 4.50 |
| Butchers | 3.75 @ | 4.25 |
| **Fibre Papers—** | | |
| No. 1 Fibre | 5.00 @ | 5.50 |
| No. 2 Fibre | 4.75 @ | 5.25 |
| Common Bogus | 2.75 @ | 3.00 |
| Screenings | 3.00 @ | 3.25 |
| Card Middles | 4.00 @ | 5.00 |
| **Glassine—** | | |
| Bleached, basis 25 lbs. | 13.00 | @16.00 |
| Bleached, basis 20 lbs. | 15.00 | @16.00 |

(Delivered New York)

| | | |
|---|---|---|
| **News, per ton—** | | |
| Rolls, contract | 62.00 @ | — |
| Rolls, spot | 62.00 @ | — |
| Sheets | 67.00 @ | — |
| Side Runs | 47.00 | @52.00 |
| **Boards—per ton—** | | |
| News | 32.50 | @37.50 |
| Straw | 52.50 | @55.00 |
| Chip | 30.00 | @35.00 |
| Binders' Boards | 65.00 | @70.00 |
| Sgl. Mla. Ll. Chip | 42.50 | @45.00 |
| Wood Pulp | 80.00 | @85.00 |
| 65 Test Jute Liner | 52.50 @ | — |
| 85 Test Jute Liner | 55.00 @ | — |

## Mechanical Pulp

(Ex-Dock)

| | | |
|---|---|---|
| **No. 1 Imported—** | | |
| Moist | 28.00 | @31.25 |
| Dry | 32.00 | @34.00 |

(F. o. b. Mill)

| | | |
|---|---|---|
| No. 1 Domestic | 26.00 | @29.00 |
| Screenings | 15.00 | @20.00 |

## Chemical Pulp

(Ex-Dock, Atlantic Ports)

| | | |
|---|---|---|
| **Sulphite (Imported)—** | | |
| Bleached | 3.75 @ | 4.40 |
| Easy Bleaching | 2.90 @ | 3.10 |
| No. 1 strong unbleached | 2.60 @ | 2.80 |
| Mitscherlich unbleached | 2.60 @ | 3.25 |
| No. 2 strong unbleached | 2.40 @ | 2.50 |
| No. 1 Kraft | 2.40 @ | 2.75 |
| No. 2 Kraft | 2.35 @ | 2.50 |
| **Sulphate—** | | |
| Bleached | 3.60 @ | 3.85 |

(F. o. b. Pulp Mill)

| | | |
|---|---|---|
| **Sulphite (Domestic)—** | | |
| Bleached | 3.40 @ | 4.75 |
| Easy Bleaching Sulphite | 2.60 @ | 2.75 |
| News Sulphite | 2.40 @ | 2.50 |
| Mitscherlich | 3.00 @ | 3.25 |
| Kraft (Domestic) | 2.50 @ | 3.30 |
| Soda Bleached | 3.40 @ | — |
| **Sulphate Screenings—** | | |
| Coarse | .75 @ | .95 |
| Refined | 1.65 @ | 1.85 |

## Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

| | | |
|---|---|---|
| **Shirt Cuttings—** | | |
| New White, No. 1 | 11.00 | @11.50 |
| New White, No. 2 | 8.00 @ | 8.50 |
| Silesias No. 1 | 7.50 @ | 8.00 |
| New Unbleached | 11.00 | @11.50 |
| New Blue Prints | 5.25 @ | 5.50 |
| New Soft Blacks | 5.25 @ | 5.75 |
| Washables | 4.75 @ | 5.25 |
| Fancy | 5.75 @ | 6.25 |
| Mixed Khaki Cuttings | 4.75 @ | 5.25 |
| Pink Corset Cuttings | 8.00 @ | 8.50 |
| O. D. Khaki Cuttings | 5.15 @ | 5.75 |
| Men's Corduroy | 3.75 @ | 4.25 |
| New Mixed Blacks | 3.50 @ | 3.75 |

Old Rags

| | | |
|---|---|---|
| **White, No. 1—** | | |
| Repacked | 5.50 @ | 6.00 |
| Miscellaneous | 4.50 @ | 5.00 |
| **White, No. 2—** | | |
| Repacked | 3.00 @ | 3.50 |
| Miscellaneous | 2.50 @ | 2.75 |
| St. Soiled, White | 2.00 @ | 2.15 |
| **Thirds and Blues—** | | |
| Repacked | 2.25 @ | 2.50 |
| Miscellaneous | 1.75 @ | 2.00 |
| Black Stockings | 3.25 @ | 3.75 |
| **Roofing Rags—** | | |
| Cloth Strippings | 1.70 @ | 1.80 |
| No. 1 | 1.70 @ | 1.80 |
| No. 2 | 1.55 @ | 1.65 |
| No. 3 | 1.30 @ | 1.40 |
| No. 4 | 1.25 @ | 1.35 |
| No. 5A | .90 @ | 1.05 |

## Foreign Rags

New Rags

| | | |
|---|---|---|
| New Dark Cuttings | 2.50 @ | 3.00 |
| New Mixed Cuttings | 2.75 @ | 3.25 |
| New Light Silesias | 7.00 @ | 7.50 |
| Light Flannelettes | 7.50 @ | 8.00 |
| Unbleached Cuttings | 10.00 | @11.00 |
| New White Cuttings | 10.50 | @11.50 |
| New Light Oxfords | 7.00 @ | 7.50 |
| New Light Prints | 5.50 @ | 6.50 |

Old Rags

| | | |
|---|---|---|
| No. 1 White Linens | 7.50 @ | 8.25 |
| No. 2 White Linens | 5.75 @ | 6.75 |
| No. 3 White Linens | 4.75 @ | 5.25 |
| No. 4 White Linens | 3.00 @ | 3.50 |
| No. 1 White Cotton | 5.50 @ | 6.50 |
| No. 2 White Cotton | 4.50 @ | 5.50 |
| No. 3 White Cotton | 3.00 @ | 4.00 |
| No. 4 White Cotton | 1.90 @ | 2.15 |
| Extra Light Prints | 2.75 @ | 3.25 |
| Ord. Light Prints | 2.25 @ | 2.50 |
| Med. Light Prints | 2.00 @ | 2.10 |
| Dutch Blue Cottons | 2.25 @ | 2.40 |
| French Blue Linens | 2.75 @ | 2.85 |
| German Blue Linens | 2.35 @ | 2.55 |
| German Blue Cottons | 2.15 @ | 2.25 |
| Checks and Blues | 1.85 @ | 2.00 |
| Lindsay Garments | 1.85 @ | 1.95 |
| Dark Cottons | 1.60 @ | 1.65 |
| Old Shopperies | 1.55 @ | 1.60 |
| New Shopperies | 1.50 @ | 1.60 |
| French Blues | 2.10 @ | 2.25 |

## Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

| | | |
|---|---|---|
| **Gunny No. 1—** | | |
| Foreign | 1.60 @ | 1.70 |
| Domestic | 1.70 @ | 1.75 |
| Wool Tares, light | 1.60 @ | 1.65 |
| Wool Tares, Heavy | 1.60 @ | 1.70 |
| Bright Bagging | 1.60 @ | 1.70 |
| Small Mixed Rope | 1.25 @ | 1.40 |
| **Manila Rope—** | | |
| Foreign | 4.50 @ | 4.75 |
| Domestic | 4.75 @ | 5.00 |
| New Burlap Cut | 2.75 @ | 3.00 |
| **Hessian Jute Threads—** | | |
| Foreign | 3.50 @ | 4.00 |
| Domestic | 3.25 @ | 3.50 |

## Old Waste Papers

(F. o. b. New York)

| | | |
|---|---|---|
| **Shavings—** | | |
| Hard, white, No. 1 | 3.25 @ | 3.50 |
| Hard, white, No. 2 | 2.40 @ | 2.55 |
| Soft, White, No. 1 | 2.50 @ | 2.60 |
| White envelope cuttings | 3.00 @ | 3.50 |
| **Flat Stock—** | | |
| Stitchless | 1.60 @ | 1.70 |
| Overissue Mag. | 1.60 @ | 1.70 |
| Solid Flat Book | 1.50 @ | 1.60 |
| Crumpled No. 1 | 1.10 @ | 1.20 |
| Solid Book Ledger | 2.00 @ | 2.10 |
| Ledger Stock | 1.70 @ | 1.80 |
| New B. B. Chips | .65 @ | .75 |
| **Manilas—** | | |
| New Env. Cut | 2.40 @ | 2.60 |
| New Cuttings | 1.60 @ | 1.85 |
| Extra No. 1 old | 1.25 @ | 1.35 |
| Print | .75 @ | .80 |
| Container | .55 @ | .65 |
| Bogus Wrapper | .75 @ | .85 |
| **Old Kraft Machine Compressed bales** | 1.85 @ | 1.95 |
| **News—** | | |
| No. 1 White News | 1.65 @ | 1.75 |
| Blue Overall | 7.50 @ | 8.00 |
| Strictly Overissue | .75 @ | .80 |
| Strictly Folded | .57½ @ | .62½ |
| No. 1 Mixed Paper | .42½ @ | .47½ |
| Common Paper | .30 @ | .34 |

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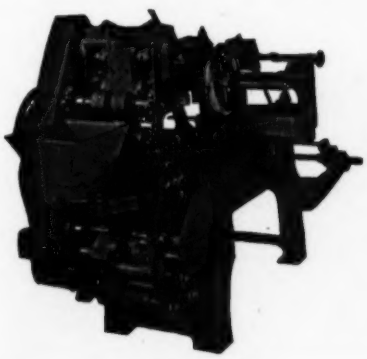

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### Twines
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Cotton— | | | |
| No. 1 | .39 | @ | .40 |
| No. 2 | .37 | @ | .38 |
| No. 3 | .36 | @ | .37 |
| B. C., 18 basis | .38 | @ | .40 |
| A. B. Italian, 18 basis | .48 | @ | .53 |
| Finished Jute— | | | |
| Dark 18 basis | .24 | @ | .25 |
| Light 18 basis | .27 | @ | .28 |
| Jute Wrapping, 3-6 Ply— | | | |
| No. 1 | .19 | @ | .21 |
| No. 2 | .18 | @ | .20 |
| Tube Rope— | | | |
| 4-ply and larger | .16 | @ | .17 |
| Fine Tube Yarn— | | | |
| 5-ply and larger | .21 | @ | .25 |
| 4-ply | .25 | @ | .29 |
| 3-ply | .28 | @ | .32 |
| Unfinished India— | | | |
| Basis | .13 | @ | .14 |
| Paper Makers Twine Balls | .11 | @ | .12 |
| Box Twine, 2-3 ply | .15 | @ | .17 |
| Jute Rope | .17 | @ | .19 |
| Amer. Hemp, 6 | .29 | @ | .31 |
| Sisal Hay Rope— | | | |
| No. 1 Basis | .16 | @ | .18 |
| No. 2 Basis | .14 | @ | .16 |
| Sisal Lath Yarn— | | | |
| No. 1 | .14 | @ | .16 |
| No. 2 | .12 | @ | .14 |
| Manila Rope | .22 | @ | .24 |

## CHICAGO

### Paper
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| All Rag Bond | .35 | @ | .41 |
| No. 1 Rag Bond | .25 | @ | .34 |
| No. 2 Rag Bond | .14 | @ | .25 |
| Water Marked Sulphite Bond | .09 | @ | .12 |
| Sulphite Bond | .06¾ | @ | .11 |
| Superfine writing | .18 | @ | .24 |
| No. 1 fine writing | .14 | @ | .18 |
| No. 2 fine writing | .12 | @ | .14 |
| No. 3 fine writing | .08½ | @ | .12 |
| No. 1 M. F. Book | .06½ | @ | .07¼ |
| No. 2 M. F. Book | .05¼ | @ | .06¾ |
| No. 1 S.&S.C. Book | .06¾ | @ | .07¾ |
| No. 2 S.&S.C. Book | .05¾ | @ | .06½ |
| Coated Book | .07½ | @ | .12 |
| Coated Label | .07½ | @ | .10 |
| No. 1 Manila | .04¼ | @ | .05¾ |
| No. 1 Fibre | .04¼ | @ | .05¼ |
| No. 2 Manila | .04¼ | @ | .04¾ |
| Butcher's Manila | .04 | @ | .04½ |
| No. 1 Kraft | .06¼ | @ | .06½ |
| Southern Kraft | .03¾ | @ | .04 |
| No. 2 Kraft | .04 | @ | .04¼ |
| Wood Tag Boards | .04¼ | @ | .06¼ |
| Sulphite Screenings | .03 | @ | .03¼ |
| Manila Tissue— | | | |
| 24x36 Sheet | .07 | @ | .07¾ |
| White Tissue— | | | |
| 20x30 Sheet | .07¼ | @ | .07½ |
| (Delivered Central Territory) | | | |
| News, per ton— | | | |
| Rolls, contract | 62.00 | @ | — |
| Sheets | 67.00 | @ | — |
| Boards, per ton— | | | |
| Plain Chip | 37.50 | @ | 42.50 |
| Solid News | 47.50 | @ | — |
| Solid News | 40.00 | @ | 45.00 |
| Manila Lined Chip | 50.00 | @ | 55.00 |
| Container Lined— | | | |
| 85 Test | 65.00 | @ | 70.00 |
| 100 Test | 70.00 | @ | — |

### Old Papers
(F. o. b. Chicago)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White | 2.20 | @ | 2.25 |
| White Env. Cuttings | 2.40 | @ | 2.50 |
| No. 1 Soft Shavings | 2.00 | @ | 2.10 |
| No. 1 Mixed | .90 | @ | 1.00 |
| No. 2 Mixed | .70 | @ | .75 |
| Ledger & Writings | 1.25 | @ | 1.35 |
| Solid Books | 1.25 | @ | 1.30 |
| Blanks | 1.40 | @ | 1.50 |
| Kraffs | 1.60 | @ | 1.75 |
| New Kraft Cuts | 2.15 | @ | 2.25 |
| Manila Envelope Cuttings | 1.65 | @ | 1.75 |
| Ex. No. 1 Manila | 1.30 | @ | 1.45 |
| Print Manila | .75 | @ | .80 |
| Folded News (overissue) | .80 | @ | .85 |
| Old Newspapers— | | | |
| No. 1 | .65 | @ | .70 |
| No. 2 | .60 | @ | .65 |
| Mixed Papers— | | | |
| No. 1 | .60 | @ | .65 |
| Roofing Stocks— | | | |
| (F. o. b. Chicago, net cash) | | | |
| No. 1 | 30.00 | @ | — |
| No. 2 | 28.00 | @ | — |

## PHILADELPHIA

### Paper
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Bonds | .06 | @ | .40 |
| Ledgers | .09 | @ | .40 |
| Writings— | | | |
| Superfine | .12½ | @ | .18 |
| Extra fine | .18 | @ | .22 |
| Fine | .17 | @ | .26 |
| Fine, No. 2 | .15 | @ | .25 |
| Fine, No. 3 | .10 | @ | .20 |
| Book, M. F. | .05½ | @ | .07 |
| Book, S. S. & C. | .06 | @ | .07½ |
| Book, Coated | .09½ | @ | .16 |
| Coated Lithograph | .07 | @ | .11 |
| Label | .07 | @ | .11 |
| No. 1 Jute Manila | .08 | @ | .09 |
| Manila Sul., No. 1 | .04 | @ | .05½ |
| Manila No. 2 | .03 | @ | .04 |
| No. 2 Kraft | .06 | @ | .06½ |
| No. 1 Kraft | .06½ | @ | .07 |
| Common Bogus | .03½ | @ | .04 |
| (Delivered Philadelphia) | | | |
| News Print Rolls | 62.00 | @ | — |
| Straw Board | 52.50 | @ | 75.00 |
| News Board | 35.00 | @ | 40.00 |
| Chip Board | 32.00 | @ | 40.00 |
| Wood Pulp Board | 85.00 | @ | 95.00 |
| Binder Boards— | | | |
| No. 1, per ton | 75.00 | | |
| No. 2, per ton | 70.00 | | |
| Carload lots | 68.00 | @ | 70.00 |
| Tarred Felts— | | | |
| Regular | 55.50 | @ | 57.00 |
| Slaters (per roll) | .84 | @ | .94 |
| Best Tarred, 1-ply (per roll) | 1.95 | @ | 2.10 |
| Best Tarred, 2-ply (per roll) | 1.50 | @ | 1.60 |
| Best Tarred, 3-ply | 2.00 | @ | 2.25 |

### Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New White, No. 1 | .10½ | @ | .11 |
| New White, No. 2 | .07 | @ | .07½ |
| Light Silesias | .07 | @ | .07½ |
| Silesias, No. 1 | .07 | @ | .09 |
| Black Silesia, soft | .05 | @ | .05½ |
| New Unbleached | .10½ | @ | .11 |
| Washable, No. 1 | .04½ | @ | .05 |
| Blue Overall | .07½ | @ | .08 |
| Cottons—According to grades— | | | |
| Washable, No. 2 | .03 | @ | — |
| New Blue | .03 | @ | .03½ |
| Fancy | .05½ | @ | .06 |
| New Black Soft | .05 | @ | .05¾ |
| New Light Seconds | .02½ | @ | .03 |
| New Dark Seconds | 1.85 | @ | 2.00 |
| Khaki Cuttings— | | | |
| No. 1 O. D. | .05½ | @ | .05¾ |
| No. 2 Mixed | .04½ | @ | .04¾ |
| Corduroy | .03 | @ | .03½ |
| New Canvas | .08½ | @ | .09 |
| New Black Mixed | .03¾ | @ | .04½ |

### Bagging
(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| Gunny, No. 1— | | | |
| Foreign | 1.50 | @ | 1.60 |
| Domestic | 1.75 | @ | — |
| Manila Rope | 3.50 | @ | 4.00 |
| Sisal Rope | 1.50 | @ | — |
| Mixed Rope | 1.10 | @ | 1.25 |
| Scrap Burlaps— | | | |
| No. 1 | 1.50 | @ | 1.60 |
| No. 2 | 1.10 | @ | 1.20 |
| Wool Tares, heavy | 3.00 | @ | — |
| Mixed Strings | 1.15 | @ | 1.25 |
| No. 1, New Light Burlap | 2.50 | @ | 2.75 |
| New Burlap Cuttings | 2.00 | @ | 2.25 |

### Old Papers
(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White | 3.20 | @ | 3.25 |
| No. 2 Hard White | 2.75 | @ | 3.00 |
| No. 1 Soft White | 2.80 | @ | 2.90 |
| No. 2 Soft White | 1.80 | @ | 1.90 |
| No. 1 Mixed | 1.50 | @ | 1.60 |
| No. 2 Mixed | .90 | @ | 1.00 |
| Solid Ledger Stock | 1.85 | @ | 1.90 |
| Writing Paper | 1.60 | @ | 1.65 |
| No. 1 Books, heavy | 1.40 | @ | 1.50 |
| No. 2 Books, light | 1.05 | @ | 1.15 |
| No. 1 New Manila | 2.40 | @ | 2.50 |
| No. 1 Old Manila | 1.50 | @ | 1.60 |
| Print Manila | .95 | @ | 1.00 |
| Container Manila | .85 | @ | .90 |
| Old Kraft | 2.25 | @ | 2.50 |
| Common paper | .50 | @ | .55 |
| No. 1 Mixed Paper | .65 | @ | .70 |
| Straw Board, Chip | .65 | @ | .70 |
| Binders Board, Chip | .65 | @ | .70 |
| Overissue News | .85 | @ | .90 |
| Old Newspaper | .50 | @ | .55 |

### Domestic Rags (Old)

| | | | |
|---|---|---|---|
| White, No. 1— | | | |
| Repacked | 4.25 | @ | 4.50 |
| Miscellaneous | 3.50 | @ | 3.75 |
| White, No. 2 | 2.00 | @ | 2.25 |
| Thirds and Blues— | | | |
| Repacked | 2.00 | @ | 2.25 |
| Miscellaneous | 1.60 | @ | 1.80 |
| Black Stockings (Export) | 3.90 | @ | 4.25 |
| Roofing Stock— | | | |
| Foreign No. 1 | 1.65 | @ | 1.75 |

## BOSTON

### Paper
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Ledgers— | | | |
| Sulphite | .07½ | @ | .15 |
| Rag content | .15 | @ | .30 |
| All rag | .38 | @ | .52½ |
| Bonds— | | | |
| Sulphite | .06½ | @ | .11½ |
| Rag content | .15 | @ | .30 |
| All rag | .36½ | @ | .65 |
| Writings | .07 | @ | .20 |
| Superfines | .11 | @ | .31 |
| Book, Super | .06 | @ | .09 |
| Book, M. F. | .05¾ | @ | .08¾ |
| Book, Coated | .08½ | @ | .20 |
| Coated Litho | .09 | @ | .12 |
| Label | .09½ | @ | .15 |
| Jute Manila No. 1 | .11 | @ | .13 |
| Manila, Sul. No. 1 | .04¾ | @ | .06½ |
| Manila, Sul. No. 2 | .03¾ | @ | .04½ |
| No. 1 Kraft | .06½ | @ | .06½ |
| No. 2 Kraft | .04½ | @ | .05½ |
| Common Bogus | .02 | @ | .02¾ |
| Delivered New England points | | | |
| News Print Rolls | 61.50 | @ | — |
| Straw Boards, rolls .009 | | | 52.50 |
| Straw Board in Sheets, basis 35s to 70s | 54.50 | @ | 55.00 |
| Filled News Board | 37.50 | @ | 40.00 |
| Chip Board | 35.00 | @ | 37.50 |
| Single Manila Lined Chip | 47.50 | @ | 50.00 |
| Single White, Patent Coated Newsboard Bender | 65.00 | @ | 80.00 |
| Wood Pulp Board | 80.00 | @ | 85.00 |
| Binder Boards | 70.00 | @ | 75.00 |
| (F. o. b. Mill) | | | |
| Tarred Felts— | | | |
| Regular, carload lots | 65.00 | @ | — |

### Old Papers
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White | 3.25 | @ | 3.75 |
| No. 2 Hard White | 2.60 | @ | 2.90 |
| No. 1 Soft White | 2.40 | @ | 2.50 |
| No. 1 Mixed | 1.10 | @ | 1.15 |
| No. 2 Mixed | .85 | @ | .90 |
| Solid Ledger Stock | 2.35 | @ | 2.45 |
| No. 1 Books, Heavy | 1.50 | @ | 1.55 |
| No. 1 Books, Light | — | @ | 1.15 |
| Manila Env. Cuttings | 2.00 | @ | 2.25 |
| No. 1 Old Manila | .90 | @ | 1.00 |
| White Blank News | 1.50 | @ | 1.60 |
| Old Kraft | 1.75 | @ | 1.80 |
| Print Manila | .80 | @ | .90 |
| No. 1 Mixed Paper | .47½ | @ | .50 |
| Overissue News | .65 | @ | .70 |
| Old Newspapers | .50 | @ | .52½ |
| Box Board, Chip | .55 | @ | .60 |

### Bagging
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Gunny No. 1— | | | |
| Foreign | — | @ | 1.65 |
| Manila Rope— | | | |
| Foreign | 5.00 | @ | 5.25 |
| Domestic | 5.00 | @ | — |
| Mixed Strings | .90 | @ | 1.00 |
| Jute Wool Strings | — | @ | 1.00 |
| Scrap Burlaps | 1.25 | @ | 1.35 |
| Scrap Sisal | 1.60 | @ | 1.80 |
| Scrap Sisal for shredding | — | @ | 1.65 |
| Wool Tares, heavy | — | @ | 1.37½ |
| New Burlap Cutting | 1.90 | @ | 2.00 |
| Australian Wool Pouches | 2.75 | @ | 3.00 |

### Domestic Rags (New)
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New White No. 1 | .09½ | @ | .10 |
| Silesias, No. 1 | .06 | @ | .06½ |
| New Unbleached | .10 | @ | .10½ |
| Fancy | .04 | @ | .04½ |
| Washable | .04 | @ | .04½ |
| Cottons—According to grades | | | |
| Blue Overalls | .06¼ | @ | .06¾ |
| New Black, soft | .04 | @ | .04¼ |
| Khaki Cuttings | .04 | @ | .04¾ |
| O. D. Khaki | .05 | @ | — |
| Corduroy | .03 | @ | .03½ |
| New Canvas | .08 | @ | .08½ |

### Domestic Rags (Old)
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Canvas | .04½ | @ | — |
| White No. 1— | | | |
| Repacked | 4.75 | @ | 5.25 |
| Miscellaneous | 5.00 | @ | — |
| White No. 2— | | | |
| Repacked | .04½ | @ | .05 |
| Miscellaneous | .03½ | @ | .04 |
| Twos and Blues | 2.75 | @ | 3.00 |
| Thirds and Blues— | | | |
| Repacked | 2.50 | @ | — |
| Miscellaneous | 1.75 | @ | 1.90 |
| Black Stockings | — | @ | 4.00 |
| Roofing Stock— | | | |
| No. 1 | 1.65 | @ | 1.75 |
| No. 2 | 1.45 | @ | 1.55 |
| No. 3 | 1.05 | @ | 1.10 |
| No. 4 | 1.10 | @ | 1.15 |

### Foreign Rags
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Dark Cottons | 1.60 | @ | 1.65 |
| New No. 1 Shirt Cuttings | 9.00 | @ | 10.00 |
| Dutch Blues | 2.00 | @ | 2.12½ |
| Lace Curtains | 5.10 | @ | 5.50 |
| New Checks & Blues | 4.25 | @ | 4.50 |
| Old Fustians | 1.90 | @ | — |
| Old Linsey Garments | 1.85 | @ | 1.90 |

## TORONTO

### Paper
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Bond— | | | |
| No. 1 Sulphite | .12½ | @ | — |
| No. 2 Sulphite | .10¾ | @ | — |
| No. 1 Colored | .13½ | @ | — |
| No. 2 Colored | .11¼ | @ | — |
| Ledgers (sulphite) | — | @ | — |
| Ledgers, No. 1 | .36 | @ | — |
| Ledgers, No. 2 | .27 | @ | — |
| Writing | .09½ | @ | .10 |
| Book— | | | |
| No. 1 M. F. (carloads) | 7.50 | @ | — |
| No. 2 M. F. (carloads) | 7.25 | @ | — |
| No. 3 M. F. (carloads) | 7.00 | @ | — |
| No. 1 S. C. (carloads) | 8.00 | @ | — |
| No. 2 S. C. (carloads) | 7.75 | @ | — |
| No. 3 S. C. (carloads) | 7.50 | @ | — |
| No. 1 Coated and Litho | 13.25 | @ | — |
| No. 2 Coated and Litho | 12.25 | @ | — |
| No. 3 Coated and Litho | 11.50 | @ | — |
| Coated tinted | 14.50 | @ | — |
| Wrapping— | | | |
| Rag Brown | 4.95 | @ | — |
| White Wrap | 5.25 | @ | — |
| "B" Manila | 5.80 | @ | — |
| No. 1 Manila | 6.65 | @ | — |
| Fiber | 6.65 | @ | — |
| Kraft, M. F. | 7.00 | @ | — |
| M. G. | 7.00 | @ | — |
| News, per ton— | | | |
| Rolls (contract) | 61.50 | @ | 62.00 |
| Sheets | 67.00 | @ | — |

### Pulp
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Ground Wood | 30.00 | @ | 31.00 |
| Sulphite easy bleaching | 60.00 | @ | — |
| Sulphite news grade | 60.00 | @ | — |
| Sulphite, bleached | 77.00 | @ | — |
| Sulphate | 60.00 | @ | — |

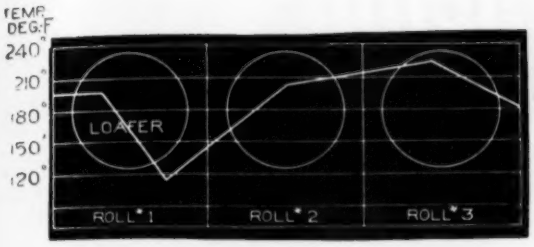
### Old Waste Paper
(In carload lots, f. o. b. Toronto)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| White Env. Cut | 3.00 | @ | — |
| Soft White Book Shavings | 2.85 | @ | — |
| White Blk. News | 1.60 | @ | — |
| Book and Ledger— | | | |
| Flat Magazine and Book Stock (old) | 1.40 | @ | — |
| Light and Crumpled Book Stock | 1.25 | @ | — |
| Ledgers and Writings | 1.50 | @ | — |
| Solid Ledgers | 1.50 | @ | — |
| Manilas— | | | |
| New Manila Cut | 1.50 | @ | — |
| Printed Manilas | 1.00 | @ | — |
| Kraft | 2.25 | @ | — |
| News and Scrap— | | | |
| Strictly Overissue | .85 | @ | — |
| Strictly Folded | .85 | @ | — |
| No. 1 Mixed Paper | .65 | @ | — |

### Domestic Rags
(Price to mills, f. o. b. Toronto)

| | | | |
|---|---|---|---|
| No. 1 White Shirt Cuttings | .10 | @ | .10½ |
| Fancy Shirt Cuttings | .05¼ | @ | — |

# Cambridge Instruments

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# PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-SEVENTH YEAR

Published Every Thursday by the
LOCKWOOD TRADE JOURNAL CO., Inc.

GEO. S. MACDONALD, President — J. BANNINGA, Secretary

Executive and Editorial Offices: 10 East 39th Street, New York

*Chicago Office:* 123 West Madison St.


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